ORTEC for Field Service

Operational Planner

User Manual

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1 Operational Planner: Overview

ORTEC FS separates the application for scheduling and planning from those used for managing resource and support data. A user with the appropriate permissions can easily switch between the different ORTEC FS applications.

1.1 Operational Planner

The application provides three functional spaces or views as tabs for easy navigation: the **Plan Board** (Gantt chart), the **Map**, and the **Tasks**. Each tab offers features that are specific to that view as well as some features shared by all views. All the views support scheduling of single day tasks and multiple day tasks.

The application also provides a **Dashboard** tab that displays a visual summary of the activities that are scheduled and yet to be scheduled. Dashboard provides specific reports related to multi-day tasks and multi-employee tasks.

1.2 Plan Board

The Plan Board view provides an overview of the schedule as a Gantt chart plotted against time by representing each task on the Plan Board as a task-block where the position represents the start time, and the size represents the task duration. Also, breaks, travel, meetings, and other availabilities are visualized. Through color-coding, tasks can be customized to describe specific task types. Standard patterns represent activities, such as meetings and breaks. Through mouse-over or hover-over actions, details of tasks and other activities become visible. By clicking on blocks, scheduling functionality becomes available, such as re-optimizing a shift or rescheduling a task.

The advantage of the Plan Board is that it's visual and shows at a glance all the tasks as well as the current status of each task. The use of symbols and color codes helps visualize the progress and realization of the schedule. Color codes are also used to signal tasks requiring corrective action.

The Plan Board view also assists in task scheduling. When scheduling manually through drag-and-drop, for example, the planner is aided by highlighted drop zones to show resources with matching skills. Moreover, visual aids allow the planner to drop a task at a specific position in a shift or, alternatively, within a zone that will trigger the optimizer to propose the best place of the task within a shift.

The Plan Board view helps to define a realistic schedule, and it's this visual aspect that makes it an excellent collaborative tool within the service team.

1.3 Map

The Map view provides an overview of the schedule by visualizing the shifts as routes on a street map. In the Map, the routes are shown in distinct colors for easy identification. Sequentially numbered circles indicate the scheduled tasks along the way. Each circle represents a task location, and the connectors represent the travel between the stops. Icons are used to describe the status of tasks, for example , in progress or completed. Also, tasks requiring a corrective action are visualized.

The Map view is also a full-fledged scheduling tool. The benefit of the Map view is that it assists in the easy detection of those tasks that aren't scheduled relative to available routes displayed on the Map. Through visual aids, it's possible to drag a task to either the required location in the route or to let the optimizer decide the optimal location within the route.

1.4 Tasks

The Tasks view enables customer-based selection and filtering of tasks. On selecting a date or interval, the task view lists all scheduled and unscheduled tasks. Each task record displays the task information, including the time window and schedule details. Tasks view can also be used to view only the details pertaining to multi-day or multi-employee tasks. The task view allows finding customer details or task details that may not be immediately apparent from the Plan Board or Map view. Though scheduling can be initiated in the Tasks view, the scheduling itself takes place in the Plan Board view.

1.5 Dashboard

Dashboard provides a collection of reports to monitor and analyze performance based on statistics gathered on scheduled as well as the tasks that are yet to be scheduled. For any selected date, the reports provides a visual insight to the task execution status, task violations, time utilization, key performance indicators (averages), and the tasks to schedule. Dashboard can also be used to view reports specific to multi-day tasks.

2 Sign in

Authorized users can sign in to the Operational Planner interface of ORTEC FS from any device with recommended screen resolution and a supported browser. For prerequisites, you can refer to the System requirements.

The signed in users can then access the department(s) to which they have access. Users with access to multiple departments can select the department to access, or use the **Recent Departments** section to access the departments that they frequently access.

2.1 How to sign in

To sign in to the application:

1. Open the URL in a supported browser. The URL will look something like this https://fieldservice-ENVIRONMENTNAME.ortecapps.com/
2. Optionally, click English (United States) to select the language. You can select the language in the application interface also.
3. Click **Sign in**.
   - If you're signing in for the first time, enter your username and password. You're logged in to the application interface.
   - If you've signed in earlier, you can select your account from the **Pick an account** window to sign in.
   - If you want to use another authorized account, click **Use another account** and provide an authorized username and password to sign in.

   > If you don't want your account name to be displayed in the **Pick an account** window, click ⋮ adjacent to the account name and then, click **FORGET**. This ensures that your account name isn't retained for future use.

After logging in, you'll access the **Field Service Suite**, where you can navigate to various applications. Each application opens in a new browser tab. To open another application or a second window of the same application, simply return to the Field Service Suite tab.

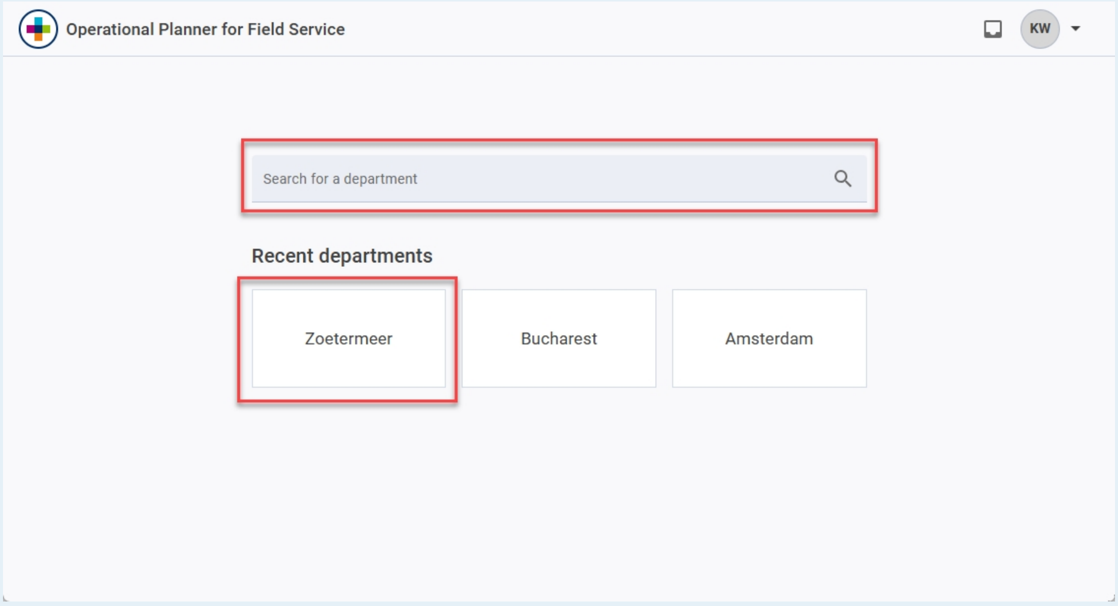
Some applications may be hidden due to access restrictions. Contact the application manager to request access.

This page also includes release notes for new features and updates.

2.2 Departments

After selecting the Operational Planner tile, the home page of the Operational Planner is shown. Search for the desired department or select from recently used ones.

Example



- Each resource belongs to a single department, with no connections between departments.
- To assign a resource to multiple departments, create it separately in each. Be aware that this may result in overlapping shifts if not managed properly.

3 Sign out

3.1 How to sign out

To sign out from the application:

1. Click your ORTEC FS account name, displayed in the upper-right corner of the application.
2. Click **Sign out**. After you sign out, the **Sign in** page is displayed.

On signing out from ORTEC FS, the login page is displayed again.

4 Plan board

The **Plan board** in **Operational Planner** gives planners, dispatchers, and schedulers a clear calendar view (Gantt chart) of all scheduled activities across shifts for resources or employees in a department.

- Each entry on the **Plan board** represents an employee shift on a specific day.
- The time zone of the **Plan board** is set by the time zone of the department.

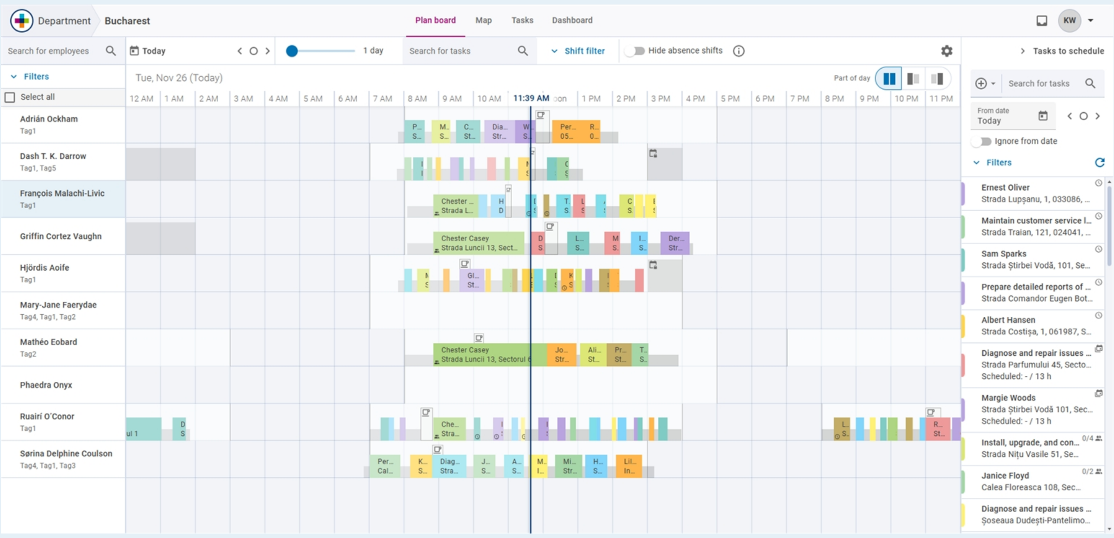
The **Plan board** shows the available time for task scheduling across various shifts throughout the week. This enables efficient scheduling and rescheduling of tasks on the most suitable shifts.

4.1 Plan board view

The **Plan board** is the default view in the **Operational Planner** interface. You can switch to the other views—**Maps**, **Tasks**, and **Dashboard**—using the tabs at the top. In the **Plan board** view, you can access:

- The list of available field service employees
- The department's planning board
- The list of unscheduled tasks

Example



4.1.1 Employee panel: Search and filter employees

The employee panel on the left lists all the employees of the department with a shift on the selected day(s), and provides options to view only selected employee shifts. Searched or filtered employees are retained when switching between the plan board and map view.

Scroll through the list and select one or more employees. Then, in the top right of the Plan board, select **Show selected** to only view the selected employee(s). Alternatively, select **Edit availability** to add an unavailability for (part of) the day, with the location, included employees, and remarks. For more information, see "Unavailabilities" on page 62.

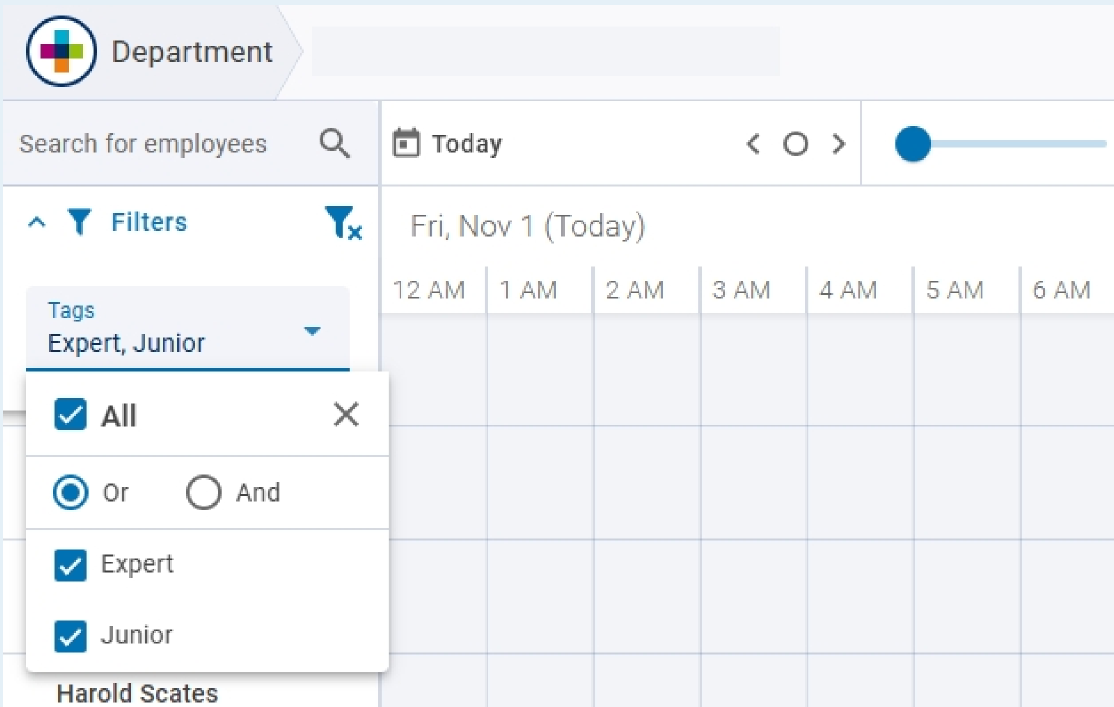
Search for employees on name or ID via the search box at the top of the Employee panel.

- Repeatedly search for a single employee and press Enter to create a list.
- Search for a part of an ID or name to search for multiple employees at once.

Via employee filtering on tags (managed via Resource Manager or the API) you can specify if the selected tags should behave as **Or** or as **And**.

- With **Or** selected, all employees are shown that contain at least one tag from the selected list of tags.
- With **And** selected, only employees are shown that contain all tags from the selected list of tags.

Example



4.1.2 Employee panel: Add shift

> You can manually add and edit shifts within OFS only if Shift Generation is enabled. If shifts are sent to OFS from an external system, they cannot be managed within OFS to avoid conflicts.

Create a shift for an employee on the day visible on the plan board. A shift can only be created for one employee at a time.

> If you create a shift on a day with an existing overlapping shift, it will be highlighted with an overlapping squares symbol. Hovering over the symbol will show which shifts overlap. The shifts will be displayed stacked on the plan board.

1. Manually add a shift by hovering over an employee name.
2. Select the three dots and select **Add shift**.
3. In the **Add shift** window, fill out the **General information**, **Properties**, and **Rules**.

   > General information, properties, and rules already defined at the **Employee** level in the **Resource Manager** can be edited.

   General information

   a. Shift times: Start time and End time.
   b. Address: Start address and End address.

   Properties

   a. Allowed task types: Select all or select from the dropdown list.
   b. Skills: Select from the dropdown list.
   c. Tags: Define a tag and click **+ Add tag**
   d. Vehicle: Select from the dropdown list.

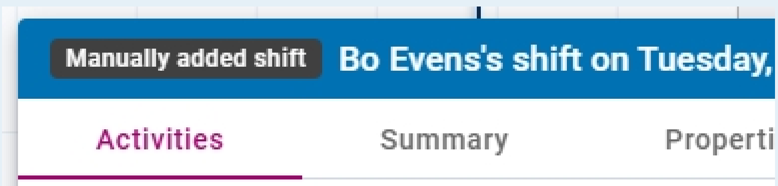
   Rules

   a. Included for optimization: yes or no
   b. Included for time slot calculation: yes or no
   c. Maximum distance
   d. Minimum available time
   e. Task duration factor
   f. Travel time outside the shift
4. Click **Save**.

4.1.3 Edit or delete a manually added shift

Manually added shifts can be edited or deleted.

1. Select a manually added shift.

   > **Example**
   >
   > Select a shift to see if it's manually added (top-left corner of the **Shift details** window).
   >
   > 
   >

2. To edit, select the **Edit** button on either the **Activities**, **Properties**, or **Rules** tab. For more

information, see "Shift details" on page 51.
3. To delete, select the red **Delete** button in the bottom-left corner.

4.1.4 Plan board

By default, the Plan board displays the scheduled tasks for all the available field resources of the department, for the selected day(s). Each record in the Plan board represents a resource shift where tasks for the resource can be scheduled. The colored blocks represents scheduled tasks. Plan board also indicates resource unavailability periods such as vacations and meetings.

4.1.5 Tasks to schedule panel

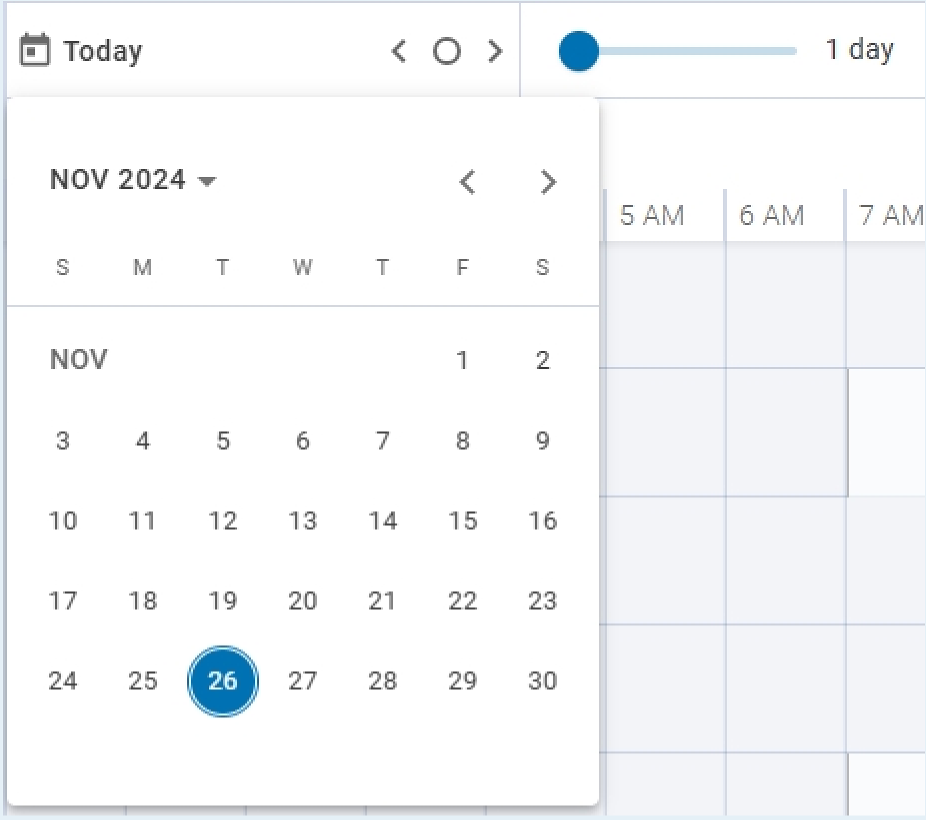
While the Plan board displays the scheduled tasks, the **Tasks to schedule** panel to the right of the Plan board, lists all the tasks which are yet to be scheduled. You can click and collapse **Tasks to schedule** panel to hide it from the Plan board view.

By default, the tasks in the **Tasks to schedule** are listed in the order of priority with the tasks to be scheduled for the current day, at the top of the list. Task description is displayed as the task title. Where task description isn't available, customer name appears as the task title. You can search or filter tasks based on dates, task types and required skills. You can easily schedule a task by dragging a task from this panel to a resource shift on the Plan board. The **Tasks to schedule** panel provides a separate tab to view tasks that span multiple days. You can use the **Multi-day tasks** tab to view partly scheduled, yet to be scheduled, or over-scheduled multi-day tasks.

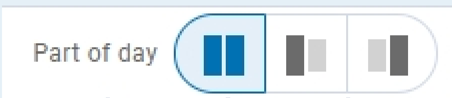
4.1.6 General settings

Plan Board view also provides settings to:

- Select the date and the number of days shown.

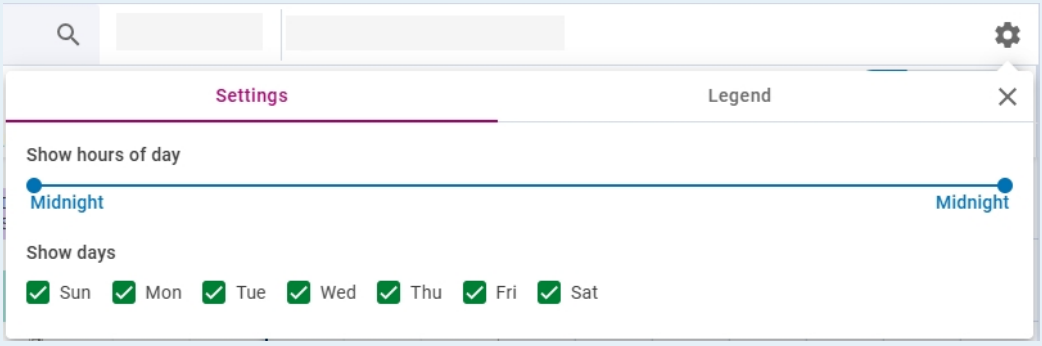
> **Example**
>
> Select the date to open a calendar and select a new date. The selected date becomes the first day shown. If displaying multiple days (by moving the slider), it starts from the selected date. Viewing one day allows you to see more details of the planning. Viewing multiple days allows you to better view the capacity or your employees. You can view up to 7 days at once.
>
> - Use arrows to move to the previous or next day.
> - Click the circle to jump to today's date.
>
> 
>

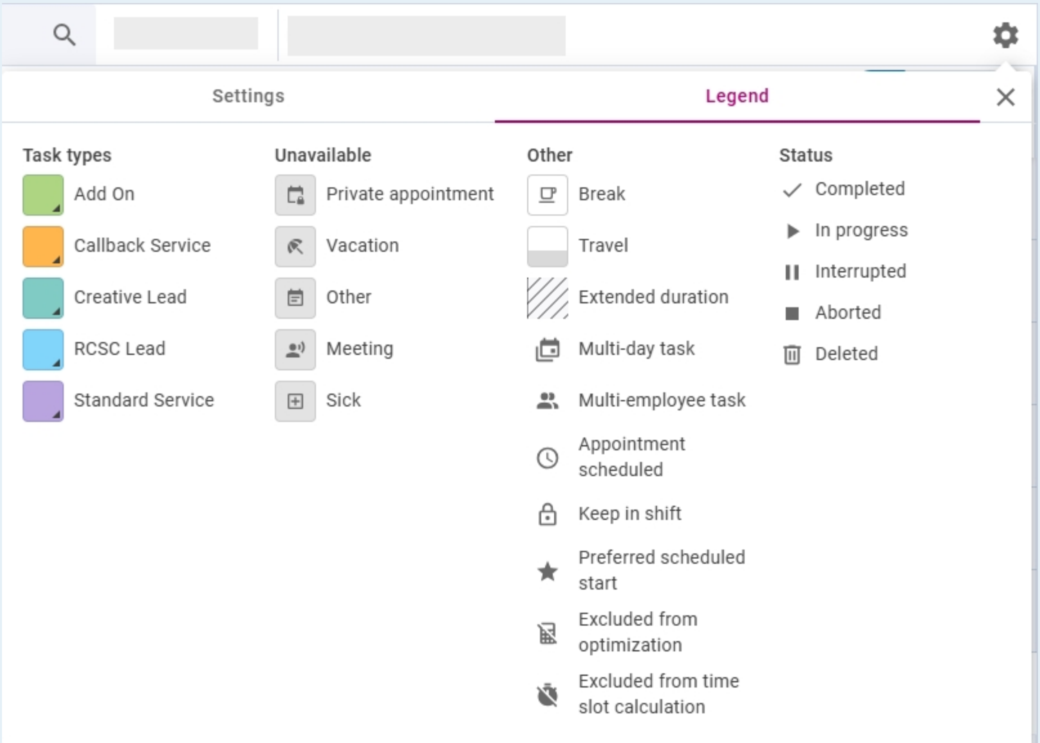
- View specific parts of a day (whole day, first half of the day, second half of the day). This setting is only available when viewing one day on the Plan board.

> **Example**
>
> 
>

- Adjust **Settings** & **Legend**. Select the icon to adjust the hours visible on the plan board and days shown. For example, you may want to exclude the weekend days. Select the **Legend** tab to adjust the colors used for the task types (defined on department level) displayed on the Plan board. Colors can be set individually, they are not set for the department. Here, you can also view the meaning of each (non-adjustable) visual cue used in the Plan board.

Example





- Search for a task on the Plan board using a customer name or address (in full or part) as the search keyword. Searched tasks are highlighted and you can navigate to the next or previous task in the search result using and , or display only the corresponding resource shifts using .
- Via the **Shift filter** you can filter shifts on **Tags**, **Allowed task types**, and **Skills**.
- Show or hide absence shifts using the **Hide absence shifts** slide button. An absence shift has no available time and no tasks are scheduled on it. When enabled, shifts that are completely unavailable (for example a vacation completely overlaps the shift) and don't have any tasks planned on it will be filtered out.

4.2 Plan board elements

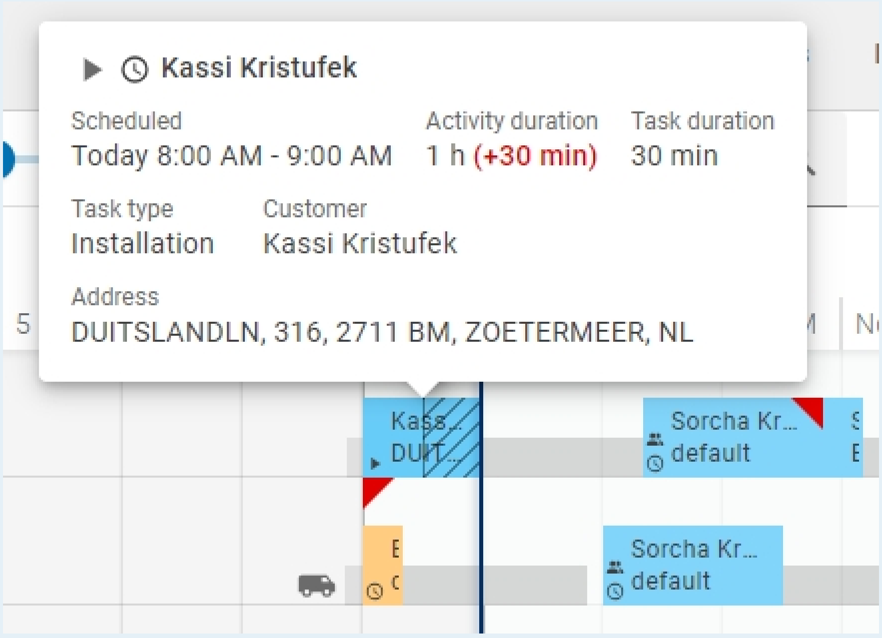
The Plan board provides the following visual cues for the ease of managing tasks:

- Hover over blocks (task, travel time, unavailability, coffee break, or vehicle) to view more information.
- The blue vertical line on the Plan board represents the **Now Line**, indicating the current time for the current date, in the time zone configured for the department.
- White blocks are shifts. Light gray means there is no shift.
- Color-coded task blocks, represent the various tasks assigned to the field service resources of the department. Each task type is represented by a color that's customizable. The in the Plan board view and Map view lets you choose the legend colors for the supported task types.
- Task blocks with represent tasks which are scheduled with violations. When you hover over the task block, the task summary displays the reason for violation in red. Task violations which are less than 5 minutes in duration aren't highlighted but the task summary displays the reason for such violations in orange.
- Tasks and travel blocks use the following progress icons:
  - represents completed tasks or travels.
  - represents tasks or travels that are in progress.
  - represents aborted task. These are tasks that wouldn't be attended later. As such tasks don't have to be rescheduled, they're not listed in the **Tasks to schedule** panel.
  - represents interrupted tasks. These are tasks that were interrupted and hence, not completed within the scheduled time. These tasks can be rescheduled for a later day.
  - represents deleted tasks.
  - represents tasks that were completed by ORTEC.
  - represents tasks that were aborted by ORTEC.
- With 'Extended duration of started activities' enabled, any activity (such as a task or travel) that meets the following criteria will have its end time updated:
  - The activity was started by a realization (i.e., it was marked as started)
  - The scheduled end time for the activity is in the past

  For these activities, the end time will be automatically updated to the current time. Additionally, these extended activities will be visually marked with a hatch pattern to distinguish them from regularly scheduled activities.

Example

Hover over the task to see the extra time added beyond the scheduled end. Activities will never be extended more than 8 hours after scheduled end time.



- Solid gray blocks indicates resource travel, for example, between the task locations. Hover over a travel block to view the scheduled travel, the duration, and the distance traveled.
- Patterned gray blocks indicates time blocked by resources. Planning cannot be done on such time blocks.
- Resource unavailability is indicated by gray blocks with icons indicating the nature of the unavailability. For example, the umbrella icon is used to represent resource unavailability due to a planned vacation and the multiple employees icon is used to represent employees who are unavailable due to planned meetings. You can hover over such blocks to view the date, time and duration for which a resource would be unavailable.
- Blocks without color and the coffee cup icon indicate an employee break time. You can hover over it to view the time and duration of break.

> An employee break can be at the start or end of the task or in between the task. In all such cases, the task block is extended to include the break time. You can hover over such blocks to view the duration of the break as well as the time spent on the task. Similarly, if an employee break is scheduled at the start or end of the travel (to a service location), the travel block is extended to include the break.

- Blocks with the vehicle icon indicate that a vehicle is connected to that shift. You can hover over it to view the license plate. The icon turns red when the vehicle is assigned to multiple shifts. You'll not see this icon when no vehicles are assigned to a shift.
- Click on the white space within a shift to open the corresponding shift details window.
- indicates multi-day tasks.
- indicates shifts that are excluded from automatic scheduling.

4.3 Customize Plan board view

The Plan board view, by default, facilitates task scheduling for 24 hours in a day and for seven days in a week. Each task activity on the Plan board is represented by a task block in a color that represents the specific task type (such as pest control, electrical repair etc) while each non-task activity such as a travel or a break is represented by a non-editable standard pattern.

You can customize the Plan board based on your specific business requirements and preferences. The button lets you change the days and hours displayed, as well as the colors that represent the various task types.

Plan board view also lets you:

- Select a date from the calendar.
- Specify the number of days (duration) of planning to be displayed on the Plan board. The default is one day.
- Focus on a part of a day, instead of a complete day. This option is available only if the Plan board is displaying the plans for a single day.
- Search for tasks using tags, or task details or customer name or address (in full or part) as the search keyword.
- Hide or display **Tasks to schedule** panel.

4.3.1 Select date and duration

The date and time displayed in the application interface corresponds to the current date and time of the department. By default, the Plan board and Map view are based on the current date and time. However, you've the flexibility to select a date to view the resource shifts for the selected date. You can also choose a range of days starting from the selected date, to display the resource shifts available during that period. You can choose from a day to a maximum of seven days, starting from the selected date. You can also enable **Ignore from date** to filter tasks ignoring the start date of the tasks.

> In **Tasks** view, you can select a date and use **Until** to specify a time period and view the task records for the selected period. You can select a period ranging from a day to two months.

How to select a date

To select a date:

1. Go to **Plan board** or **Map** tab.
2. Click to select the required date from the calendar. Optionally, you can use next to the calendar to select current date, and **<** and **>** buttons to select a date close to the current date.

How to specify the number of days

You can specify the number of days starting from the selected date to display the available resource shifts for the selected date range, on the plan board or map.

To specify the number of days:

1. Use the slider to select the number of days. The number of days selected are highlighted. The number increases from 1 day to 7 days, as you move along the slider from left to right.
2. Stop when the slider is at the required number of days. Based on your selection, the resource shifts for the selected number of days, starting from the selected date, are displayed.

4.3.2 Specify business days and hours

You can use ⚙ in Plan Board to customize the business days and hours, as well as the color legends of the various task types.

How to specify business days and hours

To specify the business days and hours:

1. Click ⚙ . A pane appears displaying **Settings** and **Legend** tabs.
2. Click **Settings**.
3. To select the business hours, use the slider below **Show hours of day**. Drag the slider handles to specify the business hours. Your selection is highlighted in the slider. The plan board is updated based on the selected hours.
4. To specify the business days, select the check boxes below **Show days**, corresponding to the required days. The plan board is updated based on your selection.
5. Click ✕ to close the ⚙ pane. The settings that you specified are retained in your subsequent login.

4.3.3 Customize legends

There are tasks of various types handled by the field service resources. In the Operational Planner interface, each task type can be distinguished by a color. Providing a unique color legend to a task type helps to identify a task type in the Plan Board and map views. This enhances the ease of assigning a specific task to a resource with the required skill.

You can change the legend of a task type from the Plan Board view or the Map view. The changes to the task legends are retained in your subsequent login.

The color legends helps:

- To identify the type of tasks that are scheduled in the resource shifts in the Plan Board view. The color of each task block on the plan board matches the color legend for that task type.
- To identify the type of tasks that are yet to be scheduled in the Map view. The icons representing customer addresses for each task to be scheduled, reflect the color legend for that task type.

The task details window displayed on selecting a scheduled or yet to be scheduled task in the Plan Board, Map or Tasks view also displays the task title in the same color as the legend specified for that task type.

How to change the legend of a task type

To change the legend of the task type:

1. Go to **Plan Board** or **Map**.
2. Click ⚙ . A pane appears displaying **Settings** and **Legend** tabs.

3. Click the **Legend** tab. The pane displays the task types and the color legend for each task type.

> Standard legends for non-task activities and realization statuses that are listed in the **Legend** pane aren't customizable.

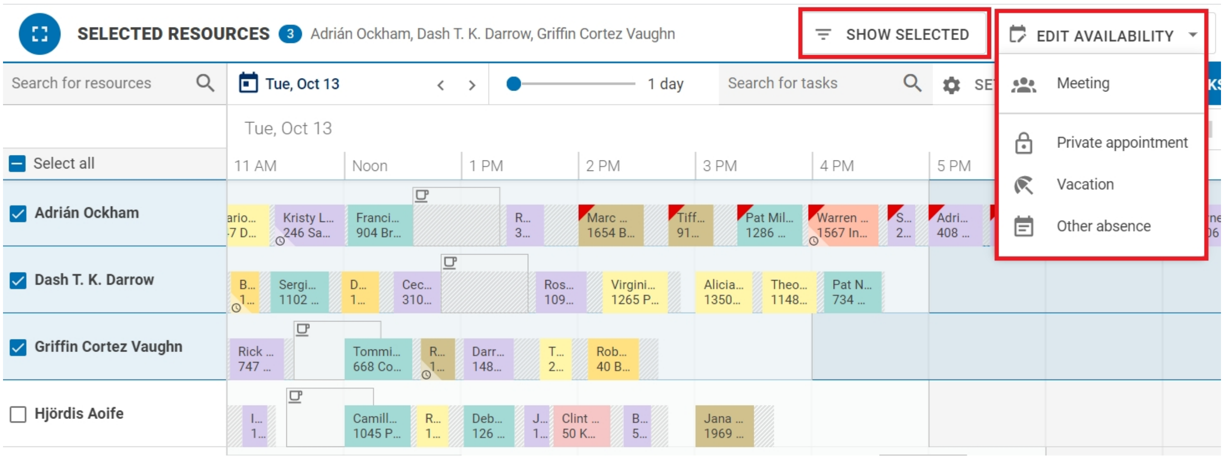
4. To change a color legend for a specific task type, click the color legend adjacent to the required task type. A color swatch pane appears.
5. Select the required color from the swatch pane. The color legend of the task type is updated immediately. Notice that the color of the task blocks in the Plan Board and the icons in the map showing the location of tasks that are yet to be scheduled, also change accordingly.
6. Click × to close the window.

4.3.4 Resource panel

The Plan Board and the Map view displays a resource panel or an employee panel on the left side of the application interface. This panel lists all the resources of the department. Employee panel also provides **Search for employees** option to search for an employee based on partial or complete employee name.

In the Plan Board view, the panel provides a **Select all** checkbox to select all the shifts. There is a checkbox corresponding to each shift too. The checkbox is visible only when you hover over the resource name.

You can select one or more resources by selecting the corresponding checkbox. On selecting one or more resources, the **Selected resources** bar displays **Show selected** to view either the selected resources or all the resources, and **Edit availability** to edit the availability of the selected resources by adding a meeting, private appointment, vacation or any other absence.



In the Map view, the resource panel displays a 👁 corresponding to each resource, when you hover over the resource name, and an 👁 at the top of the panel to hide or show all the listed resource shifts. By default, the map displays all the resource shifts. You can click 👁 corresponding to a resource to hide any selected resource shift from the map.

The Map view also provides a **Filters** button above the resource panel to filter resource shifts on the map based on the shift tags. The resource panel also provides a color tag for each resource. The color of a resource shift on the map corresponds to this color tag.

4.3.5 Select resources in Plan board view

The Plan Board view, by default, displays the employee panel listing all the available employees in the selected department for the selected day(s) in the alphabetical order of their names.

On hovering over employee names, the panel displays checkboxes. To view the shifts of only selected employees, you can select the corresponding checkboxes, and then select **Show selected** from the **Selected resources** panel. Being able to select a few employees comes handy when you want to edit the availability details of multiple employees at the same time.

> **Example**
>
> If a team of four employees have to attend a training for 2 hours from 9 AM to 11 AM on a specific day, you can select these employees, and specify their unavailability during the selected time period. The employees are displayed as unavailable for task scheduling for the selected period in the plan board. Any tasks previously scheduled for that time, would show violations.

You can use **Search for employees** to filter a shift based on partial or complete employee name. To search for another employee, enter a new keyword and search again.

You can also filter shifts based on the tags associated with the shift. All available tags are listed in **Tags** in the **Filters** section.

Use to clear search keywords and tags, and view all the shifts in the plan board.

4.3.6 Manage tasks from Plan board view

The Operational Planner interface provides multiple options to manage tasks. As a planner, you can schedule, reschedule or unschedule tasks from the **Plan board**, **Map** or **Tasks** tab. Each of the views present unique options to schedule tasks on the most appropriate resource shifts.

Scheduled tasks which are in progress (indicated by) or completed (indicated by), can't be rescheduled or unscheduled. You can notice that such tasks don't display any associated **Reschedule** or **Unschedule** options.

4.3.7 View tasks to be scheduled

The **Tasks to schedule** panel in the Plan board view provides access to tasks that are yet to be scheduled. The tasks displayed in the panel are ordered based on their start time. Thus, the tasks that are meant to be scheduled first appears on the top of the list. This allows you to focus on the tasks to be planned on priority.

To hide the panel from the Plan board view, you can click the **Tasks to schedule** button.

How to view the tasks to be scheduled

To view the tasks that are yet to be scheduled:

1. Go to **Tasks to schedule** panel. If the panel isn't visible, click the **Tasks to schedule** button to display the panel.
2. **Search for tasks** by entering keywords. Specify whether the keywords are to be included or excluded by selecting the search mode using ⊕ ▾ . For example, to list only tasks specific to a customer, select the search mode 'Include' and provide the required tag, customer name or address in **Search for tasks**. At the bottom of your filters, you can view and delete your search criteria.
3. Click to select the **From date**, or use the **Previous**, **Today**, and **Next** icons. Based on the selected **From date**, the **Tasks to schedule** panel lists all the tasks that are to be scheduled as of that date.

> The listed tasks are ordered based on the start time of the appointment window. This enables you to decide on the tasks that are to be planned first.

4. Enable **Ignore from date** to search all tasks, not only as of the **From date**.
5. These additional options help you filter the task list further:
   - **Until**: Specify the days, weeks or months to filter the tasks. For example, if you specify 5 days, only those tasks that are to be scheduled within the next 5 days from the date that you selected, are listed. There is minimum of 1 day and a maximum of till the end of next month.
   - **Task kind**: Search for all tasks, Multi-day tasks, Multi-employee tasks, and/or tasks.
   - **Task types**: Select the task types to filter the tasks. Task types are defined on task level.
   - **Required skills**: Select the skills that you want to filter. Required skills are defined on task level.

The result is a list of up to 50 tasks that can be scheduled.

4.4 Schedule tasks

Plan board view helps in scheduling tasks on resource shifts that match the task type and the skill requirements. You can initiate task scheduling from Plan board view in multiple ways:

- Click on a task in the **Tasks to schedule** panel and use the **Schedule** option in the **Task details** window.
- Drag a task from the **Tasks to schedule** panel to a resource shift in the Plan board.
- Select one or more tasks from the **Tasks to schedule** panel and use the **Schedule** option displayed. Holding down the Shift-key while selecting a second task will select all tasks in between.

> Selecting tasks and using the Shift-key feature only applies for regular tasks, not for multi-day or multi-employee tasks. If you select multiple tasks, you have to schedule them on the same shift. Calculating proposals is not possible if you select multiple tasks.

The Plan board supports scheduling with optimization as well as without optimization:

- Scheduling with optimization is triggered, when you drop a task on a resource shift to initiate task scheduling. The application identifies the appropriate location for the task on the resource shift, and optimizes the resource shift. The impact of optimization on the total time and distance of the resource shift is calculated and displayed. Optimization is done for one shift.
- Scheduling with optimization is also triggered, when you select a task from the **Tasks to schedule** panel and select **Schedule** > **Schedule with optimization**. Optimization is done for all shifts. See step 5 below.
- Scheduling without optimization happens when you drop a task at a specific position on a resource shift. The possible positions on resource shifts where a task block can be dropped are highlighted by a blue pin on the resource shifts.

4.4.1 How to schedule a task

> You can drag a task from the **Tasks to schedule** panel to a shift on the plan board to initiate a simple task scheduling.
>
> The following steps explain how you can initiate task scheduling from the Task details window. This triggers the scheduling mode where you've additional options provided in the **Scheduling task** bar.

To schedule a task in the Plan board view:

1. In the Plan board view, use to select the date. You can also select the number of days. The plan board displays the shifts for the selected days.

2. In the **Tasks to schedule** panel, click the task to be scheduled. The Task details window displays details such as appointment time or time window and the required skills.

3. Click **Schedule** (proceed to step 5 to explore the options when clicking the arrow on this button). This initiates the scheduling mode, and the task block appears at your cursor. The **Time window** for this task will be shown as a light green shaded area (this can also be indicated with a green **Time window** button pointing to the left or right of the Plan board). Before dropping the task block on a shift, you have the following options:

    - Select **MORE DETAILS** to view all task details.

    - Select **Matching properties** to only show the shifts that match the properties.

    - Select **Go to** to go to the **First day of time window** or **Last day of time window**.

    - Select **Calculate proposals** to view a list of **Proposed shifts** ranked on number after matching the task requirement with the shift properties. You can view the change in KPIs for choosing an option. You can calculate more proposals or view proposed shifts with or without violations. Violations are shown in red. Click **Schedule** to plan the task on the proposed shift, or drag-and-drop the task to a shift.

    - Select the **X** to close the scheduling mode.

4. Move the cursor along the shifts on the Plan board. The task block moves along with the cursor.

   - When you drag a task block to an empty space of any shift, the shift is highlighted and a label **Schedule task and optimize shift** is displayed. You can click to drop the task on the required shift. Such task scheduling triggers shift optimization.

   - Optionally, to schedule a task without shift optimization, you can choose to drop the task block at any position highlighted by the blue pin on the required resource shift.

5. Alternatively, select the arrow behind the green **Schedule** button. This will give you three options:

   - The option **Schedule** will allow you to manually schedule the task as explained in step 3 and 4 above.

   - The option **Calculate proposals** will show you a list of **Proposed shifts** as explained above.

   - The option **Schedule with optimizer** will allow you to select the employee(s) to be included in the optimization. You can also choose to (not) keep the already scheduled tasks in their shift. After clicking **Schedule**, all shifts will be optimized and the task will be scheduled.

> - The optimizer will try to schedule all selected tasks, but it could be that only a subset of the selected tasks will be scheduled. However, if you use the **Schedule** button (instead of **Schedule with optimizer**) to assign tasks to a single shift, all selected tasks will be scheduled.
> - If no tasks are planned, no shifts are optimized.
> - Usually (depending on the optimization script) a task is only scheduled if no new violations are introduced and if existing violations are not worsened.
> - This functionality is also available from Map view.
> - After optimization, the impact on the KPIs travel time and travel distance is shown.

4.4.2 Schedule multi-employee tasks

The ORTEC FS multi-employee task feature supports efficient and easy scheduling of multi-employee tasks on the shifts of field service technicians with the right skills (including those employees who are absolutely required for the task). The feature ensures multi-employee tasks are scheduled when all the employees involved are available at the same start time and for the entire duration of the task at the required address.

The multi-employee task feature is currently provided as a feature toggle. The feature related options are displayed only when the feature is toggled on.

Multi-employee tasks that are yet to be scheduled or that are partially scheduled are listed under the **Tasks to schedule** panel in both Plan board and Map view. In all views, filter on Task kind **Multi-employee task** to list such tasks.

You can initiate scheduling of a multi-employee task in different ways from the Plan board view:

- Click on a listed multi-employee task and use the **Schedule** option in the task details window.
- Drag a multi-employee task from **Tasks to schedule** panel to an employee shift in the Plan board; the shifts with matching skills and time windows are highlighted.

If the task is scheduled on a shift where the task types and skill requirements of the task doesn't match with those of the resource, it shows a violation.

There can be tasks that aren't allowed to be planned on specific dates. Such tasks when clicked displays a **Task calendar** link which displays a calendar showing the days when the task can be planned and the days when the task cannot be planned. When you try to plan such a task, the plan board indicates the dates when the task isn't meant to be planned with the **Not allowed** label. Planning a task on a date when it's not allowed to be planned, results in a violation.

How to schedule a multi-employee task

> You can also drag a multi-employee task from the **Tasks to schedule** panel to the plan board to initiate task scheduling.

To schedule a multi-employee task:

1. From the Plan Board view, click to select the date.
2. Filter on the Task kind **Multi-employee task**. This displays the multi-employee tasks for the day that are either partially scheduled or are yet to be scheduled.
3. Click the multi-employee task to be scheduled. The task details window displays details such as appointment time or time window and the required skills.
4. Click **Schedule**. This initiates the scheduling mode where you're taken to the Plan Board and the task block appears at your cursor.

   > **Example**
   > The Plan Board highlights the **Time window** of the task with a green background. The label **Matching properties** indicates the resource shifts that match the task type and skill requirements while the label **Not allowed** indicates that the task is not allowed to be planned on those dates.

5. Optionally, use the day slider to display shifts for 5 or 6 days on the Plan board.
6. Move the cursor to the required shift on the Plan board. The task block moves along with the cursor.
7. Click on the required shift or at any specific location on the shift to schedule the task. The task is scheduled on the selected shift. The impact of this scheduling on the KPIs is displayed.

The **Tasks to schedule** panel will continue listing a multi-employee task until it is scheduled on the required number of employees. Multi-employee tasks that are not completely scheduled, will display values indicating the same. For example, '1/3' indicates that the task is assigned to 1 employee of the total required 3 employees.

8. Proceed to schedule the task on other employee shifts, as required.

The starting time of the multi-employee task scheduled on the first shift is treated as the target start time for that multi-employee task. This target time is highlighted when you drag the task again from **Tasks to schedule** panel to schedule it on another employee shift. On dropping the task on another shift, the task is scheduled in such a way that the start time is aligned with the target start time.

4.4.3 Schedule multi-day tasks

Multi-day tasks are those tasks where the activities associated with the task is scheduled to be handled in more than a single business day. Multi-day tasks can be easily scheduled on a shift with matching task type and skill sets. During a multi-day task scheduling, the application automatically distributes the activities associated with the task across multiple days.

As the activities of a multi-day task takes up the entire duration of the shift on which it is scheduled, when you schedule a multi-day task on a shift, all tasks currently scheduled on that shift are unscheduled before the multi-day task is scheduled. It is possible that the last set of activities associated with a multi-day task do not require the entire shift time. Thus, the rest of that specific shift can be used for planning other tasks.

You can choose to delete the last set of activities planned on the last day of a multi-day task, and schedule it separately on a later date. Such multi-day tasks are treated as partially scheduled tasks and they remain in the **Tasks to schedule** panel in Plan board/Map view and in the **To be scheduled** tab of the Tasks view, until the last set of activities are also scheduled.

Multi-day tasks that are yet to be scheduled or that are partially scheduled are listed under the **Tasks to schedule** panel in both Plan board and Map view. In all views, filter on Task kind **Multi-day task** to list such tasks.

You can initiate scheduling of a multi-day task in different ways:

- In the Map view or Plan board view, click on a multi-day task and use the **Schedule** option in the task details window; you can use the **Show on** button and select **Show on map** to view the multi-day task address location on the map.
- In the Plan board view, drag a multi-day task from **Tasks to schedule** panel to a resource shift in the Plan board; the shifts with matching skills are highlighted.
- In the Tasks view, click the **Schedule** option associated with a multi-day task.

If the activities associated with the task are scheduled on a shift where the task types and skill requirements of the task doesn't match with those of the resource, the scheduled activities show a violation.

There can be tasks that aren't allowed to be planned on specific dates. Such tasks when clicked displays a **Task calendar** link which displays a calendar showing the days when the task can be planned and the days when the task cannot be planned. When you try to plan such a task, the plan board indicates the dates when the task isn't meant to be planned with the **Not allowed** label. Planning a task on a date when it's not allowed to be planned, results in a violation.

How to schedule a multi-day task

> You can drag a multi-day task from the **Tasks to schedule** panel to the plan board to initiate a simple task scheduling.

To schedule a multi-day task:

1. From the Plan board or Map or Tasks view, click to select the date.
2. Filter on the Task kind **Multi-day task**. This displays the multi-day tasks that are either partially scheduled or are yet to be scheduled.
3. Click the multi-day task to be scheduled. The task details window displays details such as appointment time or time window and the required skills.
4. Click **Schedule**. This initiates the scheduling mode where you're taken to the Plan board and the task block appears at your cursor.

   > **Example**
   >
   > The Plan board highlights the **Time window** of the task. The label **Matching properties** indicates the resource shifts that match the task type and skill requirements while the label **Not allowed** indicates that the task is not allowed to be planned on those dates.

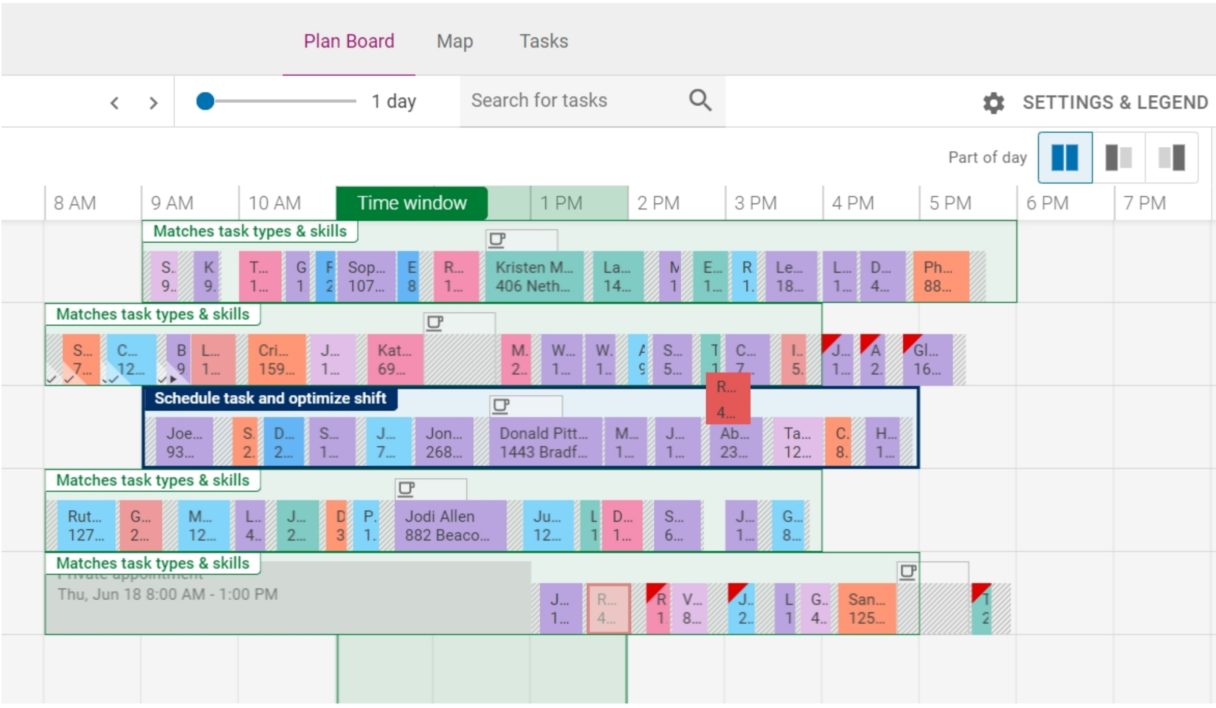
5. Optionally, use the day slider to display shifts for 5 or 6 days on the Plan board.
6. Move the cursor to the required shift on the Plan board. The task block moves along with the cursor.
7. Click on the required shift or at any specific location on the shift to schedule the task. This displays a page with the **Task Summary** and **Schedule Overview** details.
8. Review the details. The **Schedule Overview** displays the dates on which the activities of the task will be scheduled. You can select the activities block on any of the dates to view the corresponding details.
9. Optionally, you can choose to reschedule the last block of activities displayed in the Schedule Overview section on a later date. To do this, select the last date displayed. This displays a that can be used for deleting the set of activities scheduled for that date. This set of activities can be scheduled on a later date.

10. Click **Schedule** to proceed or close button to cancel the operation. On clicking **Schedule**, the task is scheduled on the selected shifts. The impact of this scheduling on the KPIs is displayed.

4.5 Reschedule tasks

Plan board lets you easily reschedule any scheduled task that's yet to start. Tasks that are in progress or completed don't display any **Reschedule** or **Unschedule** options.

The task can be rescheduled on any resource shift that matches the task type, required skills, and the task time window. It can be rescheduled at another position on the same shift or on a different resource shift. The task can also be rescheduled for another day.



Rescheduling a task can be easily done by drag and drop. This involves selecting a task block to be rescheduled, and dropping it either on:

- a resource shift to initiate automatic scheduling of the task and optimization of that shift
- a specific position on a resource shift to schedule the task at that time on the shift, without any shift optimization

Rescheduling can also be initiated from the task details window. You can click on any scheduled task or select multiple tasks at once and click **Reschedule** to start rescheduling.

Task rescheduling may result in task violations. Verify the violation details and make the required changes.

4.5.1 How to reschedule a task by drag and drop

To reschedule a task by drag and drop:

1. Select the task to be rescheduled. Hover over the task block to view the task details. To locate a task based on customer name or address, you can use the **Search for tasks** filter.
2. Drag the task block to the required shift. Notice that the time window of the task as well as the shifts that match the task type and skills, are highlighted in green.
3. Identify a shift to drop the task block to reschedule the task. For example, you can consider dropping the task on a shift with the label **Matching properties**.
4. Click on the required shift or at any specific location on the shift to drop the task. The task is rescheduled and the impact of this change on the KPIs is displayed. The resource shift recalculates the scheduled time for all the tasks succeeding the rescheduled task.

> Dropping the task on a shift (instead of a definite location on shift), triggers automatic scheduling of the task on the shift, followed by shift optimization. However, if you reschedule a task at a definite location on a shift, shift optimization isn't automatically triggered. In such cases, when required, you can go to the shift details window and optimize that shift. For details, refer to the topic on "Shift details" on page 51

4.5.2 How to reschedule a task from task details window

To reschedule a task from task details window:

1. Click the task to be rescheduled. The task details window appears.
2. Click **Reschedule**. A task block appears that can be dropped on any shift to enable rescheduling.
3. Optionally, you can use options in **Scheduling task** bar. For more information, see "Schedule tasks " on page 22.
4. Drag the task block to the required shift. Notice that the time window of the task as well as the shifts that match the task type and skills, are highlighted in green.
5. Identify a shift to drop the task block to reschedule the task. For example, you can consider dropping the task on a shift with the label **Matching properties**.
6. Click on the required shift or at any specific location on the shift to drop the task. The task is rescheduled and the impact of this change on the KPIs is displayed. The resource shift recalculates the scheduled time for all the tasks succeeding the rescheduled task.

> Dropping the task on a shift (instead of a definite location on shift), triggers automatic scheduling of the task on the shift, followed by shift optimization. However, if you reschedule a task at a definite location on a shift, shift optimization isn't automatically triggered. In such cases, when required, you can go to the shift details window and optimize that shift. For details, refer to the topic on "Shift details" on page 51

4.6 Unschedule tasks

You can unschedule a scheduled task from the respective task details window. Plan board view also lets you unschedule all the tasks scheduled on a resource shift. If **Keep all tasks in shift** option is enabled, you've to first disable this option before unscheduling the tasks from the shift. You can find **Keep all tasks in shift** / **Deactivate 'keep all tasks in shift'** option in the **More** button menu of shift details window.

The task that you unschedule would be listed again in the **Tasks to schedule** panel, and hence, can be scheduled later.

4.6.1 How to unschedule a task from Plan board

⚠ No confirmation is asked before a task is unscheduled.

To unschedule a task from the Plan board:

1. Click and select the required date. The Plan board is updated with resource shifts for the selected date. You can hover over the task block to view the task details.
2. Click the task to be unscheduled. The task details window is displayed.
3. Click **Unschedule**. The task is unscheduled and the impact of this change on the KPIs is displayed.

4.6.2 How to unschedule all tasks from a resource shift

To unschedule all tasks scheduled on a resource shift:

1. In the Plan Board view, click and select the required date. The Plan Board is updated with resource shifts for the selected date.
2. Click on the space above the resource shift from which you want to unschedule all the scheduled tasks. The shift details window appears.
3. Click **More**, and select **Unschedule tasks**. A confirmation window appears.
4. Click **Unschedule** to confirm. The tasks are unscheduled and the impact of these changes on the KPIs is displayed.

5 Map

The map in the **Operational Planner** interface provides a visual representation of the available shifts of all the employees belonging to the department. The employee shifts are shown as routes on a map and the scheduled tasks are displayed as stops on the routes. Map also allows managing task scheduling, rescheduling and unscheduling.

5.1 Map view

The default Map view displays the shifts of all the employees belonging to the department for the current day. The Map view also shows a employee panel to the left of the map. The employee panel lists all the available employees of the department, and provides options to view only selected employee shifts. Via employee filtering on tags you can specify if the selected tags should behave as 'Or' or as 'And'. Searched or filtered employees are retained when switching between the plan board and map view.

- With 'Or' selected, all employees are shown that contain at least one tag from the selected list of tags.
- With 'And' selected, only employees are shown that contain all tags from the selected list of tags.

On the map, the employee shifts are shown in different colors for easy differentiation. The color before an employee's name matches their route color. Clicking the name zooms the map to their route. The scheduled tasks on shifts are indicated by sequentially numbered circles along the route. Each circle represents a stop or a task location and the connectors or the routes displayed represents the travel between the stops.

The **Tasks to schedule** button when clicked, displays not only the panel listing the tasks that are yet to be scheduled but also displays the address of these tasks as location icons on the map.

5.2 Map elements

By default, the Map view displays the scheduled activities for the current day, for all the available employees of the selected department. The map provides the following easily recognizable visual cues:

> Some of the elements listed here are displayed based on the context or the chosen display settings.

- Colored routes represents resource shifts. Each shift is shown in the same color as the color legend displayed adjacent to the resource name. Map settings can be used to view the routes as following the actual roads, or as straight lines connecting the adjacent stops along the route.
- Sequentially numbered circles along the route, represents addresses of scheduled tasks. You can hover over a stop to view the task details.

- Circles with a red border and a red exclamation mark indicate a scheduled task with one or more violations. The number inside the circle represents the sequential position of the task within the shift.
- When tasks are marked as realized, an icon appears next to the corresponding number, and the circle surrounding the number becomes solid. Unrealized tasks are displayed as white circles containing the number. Once tasks are realized, they can no longer be moved in the planning interface.
- Circles with ▶ represents tasks in progress.
- Circles with ✓ represents completed tasks.
- Circles with ■ represents aborted task. These are tasks that wouldn't be attended later. As such tasks don't have to be rescheduled, they're not listed in the **Tasks to schedule** panel.
- Circles with ⏸ represents interrupted tasks. These are tasks that were interrupted and hence, not completed within the scheduled time. These tasks can be rescheduled for a later day.
- represents the last known location of the resource, displayed in the same color as the resource shift. It is grayed out, if more than 12 hours has elapsed since the last known location was reported.
- indicates a location that you've searched and found by providing the address.
- indicates the start and end locations of a shift shown in the map. Start and end locations can be different.
- indicates a group of tasks that are yet to be scheduled, with the number representing the actual number of tasks that are to be scheduled. You can zoom in to view the individual tasks. This is available only when the **Tasks to schedule** panel is visible.
- represents a task that's yet to be scheduled; the color indicating the task type, in the same color as that of the legend of the task type. For example, . Tasks that are yet to be scheduled are displayed on the map only when the **Tasks to schedule** panel is visible. Unplanned tasks can have an icon indicating that it's a multi-employee or multi-day task.

5.3 Map settings

The Operational Planner interface provides the **Plan board**, **Map** and **Tasks** tabs for easy navigation to the respective functional space. Each tab provides a view that facilitates certain common functionalities along with certain features that are specific to the view. You can click on **Map** tab to access the Map view.

The default Map view displays the shifts of all the resources belonging to the department on the current day. The Map view shows the employee panel in the left of the map. This panel lists all the available employees of the department and provides options to select only a few so as to view only their corresponding shifts on the map.

Map view provides access to options and settings to:

- Select a date
- Specify the number of days (duration), instead of the default single day
- Search for employees or locations
- Display shifts of all or only selected resources
- Enable or disable the following options via the **Settings** icon > **Settings** tab:
    - **Show routes**: Shows the complete routes. You can disable it to display only the stops of the routes. By default on.

- **Show routes with straight lines**: Shows routes as straight lines connecting the stops. If you disable this option, the routes are shown as following the roads. By default on.
- **Show last known locations**: You can enable this to view the last known location of employees handling the tasks, for those shifts that are in progress. Only possible when working with GPS realizations.

- Change the color legend used for the different task types via the **Settings** icon > **Legend** tab.
- Click **Tasks to schedule** button to display or collapse the panel listing the tasks to be scheduled. With the **Tasks to schedule** panel open, you'll see unscheduled tasks on the map. When closed, you'll not see unscheduled tasks.
- View map elements using zoom buttons on map

5.3.1 Select date and duration

The date and time displayed in the application interface corresponds to the current date and time of the department. By default, the Plan board and Map view are based on the current date and time. However, you've the flexibility to select a date to view the resource shifts for the selected date. You can also choose a range of days starting from the selected date, to display the resource shifts available during that period. You can choose from a day to a maximum of seven days, starting from the selected date. You can also enable **Ignore from date** to filter tasks ignoring the start date of the tasks.

> In **Tasks** view, you can select a date and use **Until** to specify a time period and view the task records for the selected period. You can select a period ranging from a day to two months.

How to select a date

To select a date:

1. Go to **Plan board** or **Map** tab.
2. Click to select the required date from the calendar. Optionally, you can use next to the calendar to select current date, and **<** and **>** buttons to select a date close to the current date.

How to specify the number of days

You can specify the number of days starting from the selected date to display the available resource shifts for the selected date range, on the plan board or map.

To specify the number of days:

1. Use the slider to select the number of days. The number of days selected are highlighted. The number increases from 1 day to 7 days, as you move along the slider from left to right.
2. Stop when the slider is at the required number of days. Based on your selection, the resource shifts for the selected number of days, starting from the selected date, are displayed.

5.3.2 Display options and settings

Map view provides certain options and settings that can be used to change the display elements that the map focus on, and the way the some of the elements are displayed.

For example, in the Map view, you can use the toggle button / above the employees panel, to hide or show all the shifts on the map. The displayed when you hover over an individual employee name can be toggled to to hide that employee shift from the map.

The map also provides the following buttons for ease of viewing:

- + : Click to zoom in.
- – : Click to zoom out.
- : Click to zoom to all data and display all the shifts and tasks including the tasks to be scheduled.

In addition, the button provides certain map settings such as **Show routes with straight lines** or **Show last known locations** that can be enabled or disabled based on your specific requirements.

How to change map settings

To change map settings:

1. Go to **Map** tab.
2. Click . A pane appears displaying the **Settings** and **Legend** tabs.
3. Click **Settings** to view the following settings:
   - **Show routes**: The map displays the resource shifts as routes on the map. By default, the setting is enabled. Disable this setting to view only the stops on the route instead of the complete route. By default on.
   - **Show routes with straight lines**: The map displays each shift as a route with straight lines connecting the stops along the route. By default, the setting is enabled. Disable this setting if you want the routes to follow the road. By default on.
   - **Show last known locations**: By default, this setting is disabled. Enable this setting to display the last known location of a field service resource. Only possible when working with GPS realizations.
4. Click Legend to view/adjust the following settings:
   - **Task types**: You can adjust the colors used to identify the task types.
   - **Unavailable**: View the unavailability icons being used.
   - **Other**: View other icons being used on the map.
   - **Realization statuses**: View all realization statuses.

5.3.3 Customize legends

There are tasks of various types handled by the field service resources. In the Operational Planner interface of ORTEC for Field Service, each task type can be distinguished by a color. You can click the in Plan Board and Map view and specify a unique color legend to a task type. This enhances the ease of assigning a specific task to a resource with the required skill.

The color legends helps:

- To identify the type of tasks that are scheduled in the resource shifts in the Plan Board view. The color of each task block on a resource shift matches the color legend for that task type.
- To identify the type of tasks that are yet to be scheduled in the Map view. The icons representing the customer addresses for such tasks reflect the color legend for that task type.

The task details window displayed when you click on a scheduled or yet to be scheduled task displays the task title in the same color as the legend specified for that task type.

How to change the legend of a task type

To change the legend of the task type:

1. Go to **Plan Board** or **Map**.
2. Click ⚙ . A pane appears with the **Settings** and **Legend** tabs.
3. Click **Legend**. The first column in the pane lists the available task types and the associated color legend.

> Standard legends for non-task activities and realization statuses that you see listed in the **Legend** pane aren't customizable.

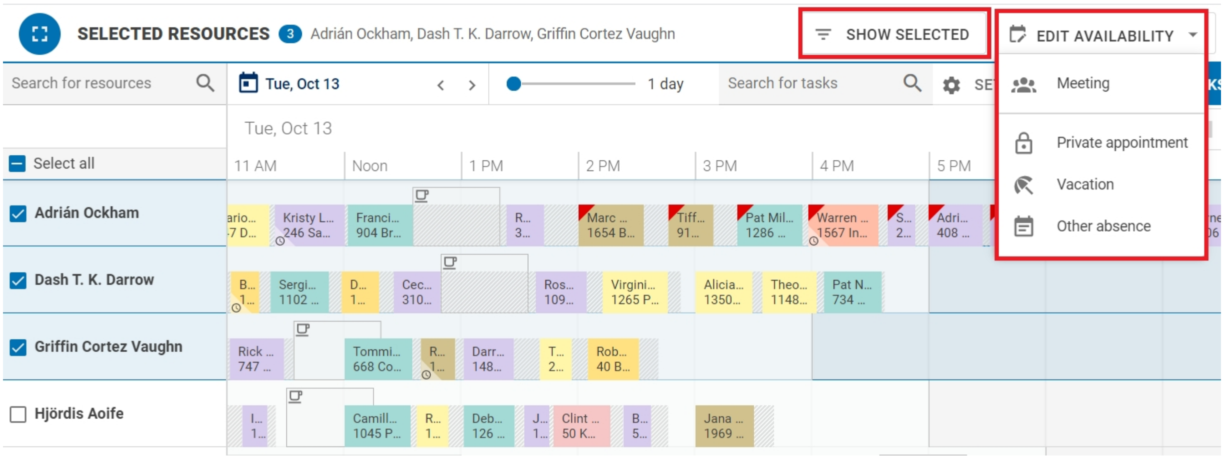
4. To change a color legend for a specific task type, click the color legend adjacent to the task type. A color swatch pane appears.
5. Select the required color. The legend of the task type is updated immediately. Task blocks of that task type in the **Plan board** and the icons on the map showing the location of tasks that are yet to be scheduled, are updated accordingly.
6. Click ✕ to close the window. The changes to the task legends are also retained in your subsequent login.

5.3.4 Resource panel

The Plan Board and the Map view displays a resource panel or an employee panel on the left side of the application interface. This panel lists all the resources of the department. Employee panel also provides **Search for employees** option to search for an employee based on partial or complete employee name.

In the Plan Board view, the panel provides a **Select all** checkbox to select all the shifts. There is a checkbox corresponding to each shift too. The checkbox is visible only when you hover over the resource name.

You can select one or more resources by selecting the corresponding checkbox. On selecting one or more resources, the **Selected resources** bar displays **Show selected** to view either the selected resources or all the resources, and **Edit availability** to edit the availability of the selected resources by adding a meeting, private appointment, vacation or any other absence.



In the Map view, the resource panel displays a corresponding to each resource, when you hover over the resource name, and an at the top of the panel to hide or show all the listed resource shifts. By default, the map displays all the resource shifts. You can click corresponding to a resource to hide any selected resource shift from the map.

The Map view also provides a **Filters** button above the resource panel to filter resource shifts on the map based on the shift tags. The resource panel also provides a color tag for each resource. The color of a resource shift on the map corresponds to this color tag.

5.3.5 Select resources in Map view

The Map view, by default, displays the shifts corresponding to all the available employees belonging to the selected department for the selected day(s). The Map view displays a list of all resources in a panel to the left of the map. You can hover over the resources and use the toggle button to specify whether or not you want to hide or display shifts of all or a few selected employees on the map.

Resource panel or the employee panel also provides a **Search for employees** to search and locate an employee. You can also use **Filters** to filter employees based on the tags associated with their shifts. For example, a tag 'Morning' can be used to filter all the morning shifts.

How to display only selected shifts on map

By default, shifts of all employees available for the day, are displayed on the map.

To view only specific shifts on the map:

1. In Map view, click . You can find this button above the resource panel. All the resource shifts displayed on the map disappears and a icon is displayed next to all resource shifts in the resource panel.
2. Hover over the employee names whose shifts you want to view on the map, and click corresponding to the employee. Shifts of selected employees are displayed on the map.

You can use **Search for employees** to locate an employee shift based on partial or complete employee name. After searching for an employee, to search for a different employee, enter a new keyword and search again.

All active filters are listed in the **Filters** section of the employee panel. Click the icon to clear all the filters and view all the shifts in the Plan Board.

5.3.6 Manage tasks from Map view

The Operational Planner interface lets you schedule, reschedule or unschedule tasks from the **Plan board**, **Map** or **Tasks** tab.

Scheduled tasks which are in progress or completed, cannot be rescheduled or unscheduled. For such tasks indicated by ▶ and ✓ in the Plan board, map and Tasks view, the **Reschedule** and **Unschedule** options aren't available.

For details on how to manage a task from Map view, refer to the following sections:

- "Schedule tasks " on page 38
- "Reschedule tasks " on page 40
- "Unschedule tasks " on page 42

5.3.7 Tasks to schedule

The Map view provides access to the **Tasks to schedule** panel that lists the tasks that are yet to be scheduled. This collapsible panel is available as a **Tasks to schedule** button.

Tasks that are yet to be scheduled and requires less than a business day can be filtered by Task kind **Task**. Tasks that span multiple days which are either partly scheduled or yet to be scheduled can be filtered by Task kind **Multi-day task**. You can choose a Task kind to filter and view the corresponding list of tasks.

When the **Tasks to schedule** panel is visible, the Map view displays the tasks to be scheduled on the map. For example, 12 on the map, indicates a group of tasks that are yet to be scheduled. The number represents the actual number of tasks that are to be scheduled. You can zoom in to view the individual tasks. Individual tasks are represented like where the color indicates the task type.

Map view lets you easily schedule tasks based on the task type as well as the proximity of such task locations to the resource shifts displayed on the map.

How to view the tasks to be scheduled

To view tasks to be scheduled in the Map view:

1. Go to **Tasks to schedule** panel. If the panel isn't visible, click the **Tasks to schedule** button to display the panel.
2. **Search for tasks** by entering keywords. Specify whether the keywords are to be included or excluded by selecting the search mode using ⊕ ▾ . For example, to list only tasks specific to a customer, select the search mode 'Include' and provide the required tag, customer name

or address in **Search for tasks**. At the bottom of your filters, you can view and delete your search criteria.

3. Click to select the **From date**, or use the **Previous**, **Today**, and **Next** icons. Based on the selected **From date**, the **Tasks to schedule** panel lists all the tasks that are to be scheduled as of that date.

> The listed tasks are ordered based on the start time of the appointment window. This enables you to decide on the tasks that are to be planned first.

4. Enable **Ignore from date** to search all tasks, not only as of the **From date**.
5. These additional options help you filter the task list further:
   - **Until**: Specify the days, weeks or months to filter the tasks. For example, if you specify 5 days, only those tasks that are to be scheduled within the next 5 days from the date that you selected, are listed. There is minimum of 1 day and a maximum of till the end of next month.
   - **Task kind**: Search for all tasks, Multi-day tasks, Multi-employee tasks, and/or tasks.
   - **Task types**: Select the task types to filter the tasks. Task types are defined on task level.
   - **Required skills**: Select the skills that you want to filter. Required skills are defined on task level.
6. Based on the selections, the task list in the **Tasks to schedule** panel is updated. This displays on the map, all the tasks which are yet to be scheduled for the selected date and period, along with the available resource shifts. Tasks that are yet to be scheduled can be identified by on the map. Multi-day tasks can be identified by .
7. To view specific task details, click on the task listed in the **Tasks to schedule**. The task details window is displayed. Optionally, you can click **Show on map** to view the task on the map.

5.4 Schedule tasks

Map view not only displays the tasks to be scheduled in the **Tasks to schedule** panel but also display these tasks as icons on the map. You can schedule tasks in one of the following ways:

- Dragging a task to be scheduled icon (displayed as on the map) to a resource shift (displayed as a route on the map). This type of scheduling doesn't trigger shift optimization.
- Clicking a task to be scheduled icon (displayed on the map as a), and using the **Schedule** option in the **Task details** window.
- Selecting one or more task in the **Tasks to schedule** panel and using the **Schedule** button at the top right of the screen. Click the arrow behind the **Schedule** button to access the options **Calculate proposals** and **Schedule with optimizer**.
  - Use **Calculate proposals** to list the shifts proposed by the application for the selected task. This triggers the scheduling mode and you are taken to the Plan Board view to complete the scheduling.
  - Use **Schedule with optimizer** to select the employee(s) to be included in the optimization. You can also choose to (not) keep the already scheduled tasks in their shift. After clicking **Schedule**, all shifts will be optimized and the task will be scheduled.

- **Calculate proposals** and **Schedule with optimizer** is not supported for multi-employee and multi-day tasks.
- Selecting tasks and using the Shift-key feature only applies for regular tasks, not for multi-day or multi-employee tasks.
- If you select multiple tasks, you have to schedule them on the same shift or schedule them with the optimizer.
- If no tasks are planned, no shifts are optimized.
- Calculating proposals is not possible if you select multiple tasks.
- The optimizer will try to schedule all selected tasks, but it could be that only a subset of the selected tasks will be scheduled. However, if you use the **Schedule** button (instead of **Schedule with optimizer**) to assign tasks to a single shift, all selected tasks will be scheduled.
- Usually (depending on the optimization script) a task is only scheduled if no new violations are introduced and if existing violations are not worsened.
- After optimization, the impact on the KPIs travel time and travel distance is shown.
- The optimizer functionality is also available from Plan board view.

5.4.1 How to schedule a task by drag and drop

Routes on the map represents resource shifts, and hence the term route and shift is used interchangeably in the current context.

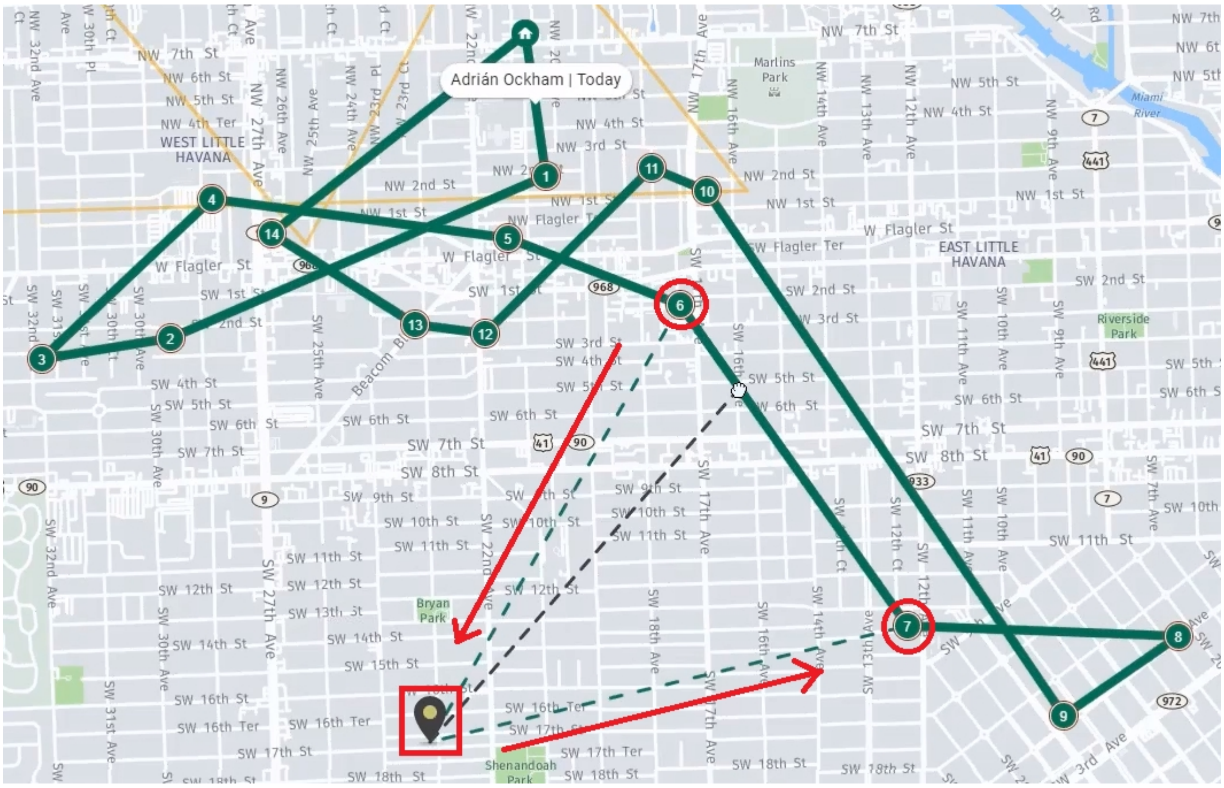
To schedule a task by dropping it on the appropriate resource shift:

1. In the **Map** view, select the required date and period. The map is updated with routes representing the resource shifts available for the selected date.
2. In the **Tasks to schedule** panel, click the task to be scheduled. The task details window appears.
3. Click **Show on** > **Show on map** to view the task on the map. A little arrow at the bottom of the **Task details** window points to the task on the map.

   Each task that's to be scheduled is indicated by a on the map. On clicking a the specific task details are displayed with an option to schedule the task. The color of each indicates the task type. Icons such as 12 indicates a group of tasks which are yet to be scheduled, with the number representing the actual number of tasks that are to be scheduled. You can zoom in to view the individual tasks in such a group.

4. Identify a route on the map on which to schedule the task. For example, you can look for a route that's in close proximity to a task that you want to schedule. If the routes aren't visible, click on the Map and select **Show routes**. Alternatively, start a new route by dragging-and-dropping a task to the home address of an employee.
5. Drag the task icon to the identified route. You cannot drag and drop a task on a route before a realized task. Dotted lines provides visual indication on how the route would be modified to accommodate the task being scheduled.

6. Drop the task on the route. The task is scheduled and the impact of this change on the KPIs are displayed. If needed, you can optimize the shift from the shift details window.



5.5 Reschedule tasks

In the Map view, the map displays the available resource shifts as routes with the scheduled tasks indicated by numbers on the route. Apart from tasks that are in progress or completed, you can reschedule any other scheduled task.

You can follow one of the following ways to reschedule tasks from the Map view:

- By dragging a scheduled task from one route and dropping it to the required position in the same route or in a different route. This method of rescheduling doesn't trigger scheduling mode.
- Clicking a scheduled task icon on the map, and using the **Schedule** option in the task details window.

- **MORE DETAILS**, that displays task details such as required skills and allowed employees.
- **Matching properties** that can be enabled to view shifts that match properties such as task type and skill requirements of the task being (re)scheduled.
- **Go to** list, to go to specific days on Plan Board. For tasks with an appointment, you have the options to go to the **First day of appointment** or **last day of appointment**. When a task is being rescheduled, an additional option **Scheduled day** is available, to go to the scheduled day of the task.

- **Calculate proposals** to trigger the application to suggest shifts on which the task can be scheduled; the shifts are proposed by the application after considering shift properties and task requirements.

Task rescheduling may result in task violations. You can verify the violation details and make the changes, if required.

5.5.1 How to reschedule a task by drag and drop

> Routes on the map represent resource shifts, and hence the term route and shift is used interchangeably in the current context.

To reschedule a task by dropping it on the appropriate resource shift:

1. In the Map view, select the required date and period. The map is updated with routes representing the resource shifts available for the selected date.
2. Select the task to be rescheduled.
3. Identify a route on the map on which to reschedule the task. For example, you can look for a route that's in close proximity to a task that you want to schedule. If the routes aren't visible, click ⚙ on the Map and select **Show routes**.
4. Drag the task icon to the identified route. Dotted lines provides visual indication on how the route would be modified to accommodate the task being rescheduled.
5. Drop the task on the route. The task is rescheduled and the impact of this change on the KPIs are displayed. If needed, you can optimize the shift from the shift details window.

5.5.2 How to reschedule a task from the map

To reschedule a task from the Map view:

1. Select the required date and period from the calendar. The map is updated with the routes for the selected date, showing the scheduled tasks as sequentially numbered stops along the route.
2. Click the task to be rescheduled. The task details window is displayed.
3. Click **Reschedule**. This takes you to the Plan Board. Notice that the task block appears for rescheduling. The **Scheduling task** bar appears at the top of the application interface with the following options:
   - **MORE DETAILS**: Click to view the task details.
   - **Matching properties**: Enable to discover resource shifts with matching task types and skills.
   - **Go to**: Click to go to **First day of appointment**, **Last day of appointment**, or **Scheduled day** of the task being rescheduled.
   - **Calculate proposals**: Lists the shifts proposed by the application for the selected task.
4. Drag the task block over the resource shifts in the Plan Board. Notice that the time window of the task as well as the resource shifts that match the task type and skills, are highlighted in green.
5. Identify a resource shift to reschedule the task. The label 'Matching properties' indicate those shifts that match the task types and skills.

> ⚠ The positions on resource shifts where the task block can be dropped so that it's scheduled in that time block, are highlighted by a blue pin. Such task scheduling doesn't involve optimizer. You can also drop the task on a resource shift and let ORTEC FS schedule it using optimizer in the appropriate position in that shift. To do this, you can drag the task block to the empty space above the shift on which you want to schedule it. Notice that such shifts are highlighted and the label **Schedule task and optimize shift** is displayed.

6. Drop the task at the required location. The task is rescheduled and the impact of this change on the KPIs are displayed. The resource shift recalculates the scheduled time for all the tasks succeeding the rescheduled task.

5.6 Unschedule tasks

You can unschedule a scheduled task from the respective task details window. Map view also lets you unschedule all the tasks scheduled on a resource shift.

If **Keep all tasks in shift** option is enabled, you've to first disable this option before unscheduling the tasks from the shift. You can find **Keep all tasks in shift** / **Deactivate 'keep all tasks in shift'** option in the **More** button menu of shift details window.

5.6.1 How to unschedule a task from the map

> ⚠ No confirmation is asked before a task is unscheduled.

To unschedule a task in the Map view:

1. Select the required date and period from the calendar. The map is updated with routes representing the resource shifts available for the selected date. The scheduled tasks are indicated by sequentially numbered stops along the route.
2. Click the task to be unscheduled. The task details window is displayed.
3. Click **UNSCHEDULE**. The task is unscheduled and the impact of this change on the KPIs is displayed.

5.6.2 How to unschedule all tasks from a shift

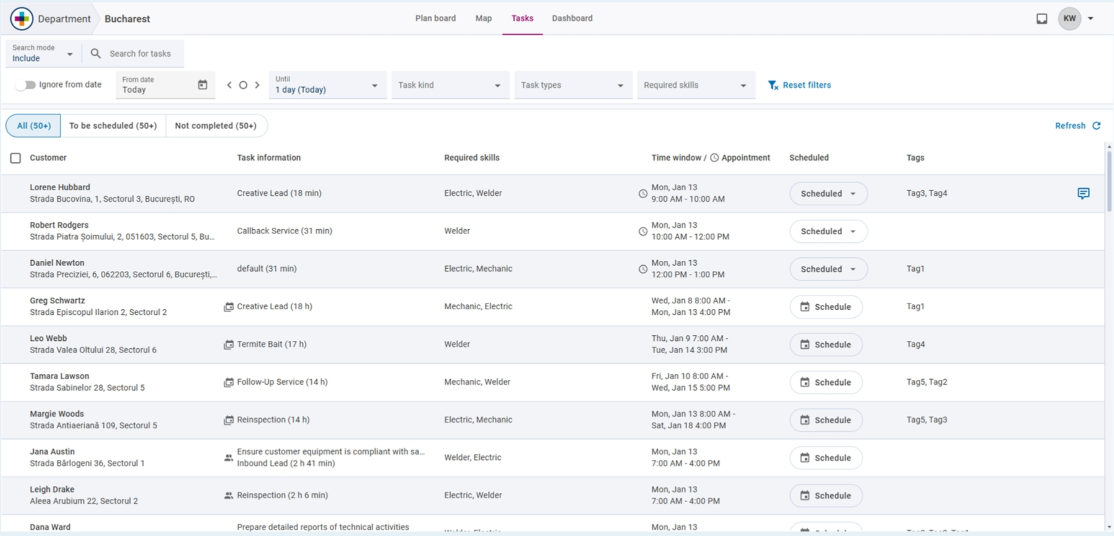
To unschedule all scheduled tasks from a resource shift in the Map view:

1. Select the required date and period from the calendar. The map is updated with routes representing the resource shifts available for the selected date. The scheduled tasks are indicated by sequentially numbered stops along the route.
2. Click the route from which you want to remove all scheduled tasks. The shift details window is displayed.
3. Click **MORE** and select **Unschedule tasks**. A confirmation window appears.
4. Click **UNSCHEDULE** to unschedule the tasks. The tasks are unscheduled and the impact of these changes on the KPIs is displayed. If **Keep all tasks in shift** option is enabled, you've to first disable the option before unscheduling the tasks from the shift.

6 Tasks

The Operational Planner interface includes a Tasks view, accessible via the **Tasks** tab, which displays all scheduled and unscheduled tasks. Each task is shown in a detailed task record.

Example



Filter the tasks as follows:

- **Search mode**: You can select 'Include' or 'Exclude' from the **Search mode** and specify the required search keywords in **Search for tasks**. Keywords can be tags, address etc.; The default mode is 'Include' where the search result displays records matching the specified search keywords.

  Example

  If you specify the tag 'Noon' as the search key word and select **Exclude** as the **Search mode**, all tasks with the tag 'Noon' are excluded from the search results.

- **Ignore from date**: Enable to ignore the **From date** specified in the date range.
- **From date**: Specify the earliest start date to be considered based on the time window / appointment window of the tasks.
- **Until**: Specify the latest possible start date to be considered based on the time window / appointment window of the tasks (1 day up to 1 month).
- **Task kind**: Select one, more, or all of the supported task kinds: Task, Multi-day task, Multi-employee task
- **Task types**: Select one, more, or all of the listed task types.
- **Required skills**: Select one, more, or all of the listed skills.

Based on the filters applied, the tasks are listed. The overview sorts tasks by the closest time window, prioritizing those needing scheduling soonest. Key task details are visible at a glance, with additional information shown by clicking on it. Tasks can be further filtered by clicking the following tabs:

- **All** that list all the tasks—scheduled tasks, aborted tasks, as well as the tasks that are yet to be scheduled; aborted tasks do not display any **Schedule** button.
- **To be scheduled** that lists only the tasks that are yet to be scheduled, and thus, functionally replace the **Tasks to schedule** panel in the Plan Board and Map views.
- **Not completed** lists tasks that are scheduled but not completed, as well as the tasks that are yet to be scheduled.

You can use **Refresh** button to trigger a manual refresh of the details displayed.

Tasks view facilitates customer-based selection and filtering of task records. Each task record shows the customer name. Each task record displays details such as required skills, time / appointment window, schedule status, and tags and remarks, if any associated with the task, thus eliminating the need to hover over the record to view the basic details.

By default, the Tasks view provides the following easily recognizable visual cues:

- Unscheduled tasks with a **Schedule** button as part of the task record.
- Scheduled tasks with a **Scheduled** status that lists the **Reschedule** and **Unschedule** options.
- Partly scheduled multi-day tasks with an **Unschedule** option.
- Multi-employee tasks that are not scheduled yet on the required number of employees, with a **Scheduled** option along with a number such as 3/4 indicating that the task is scheduled on three out of the four employees, and is yet to be scheduled on one more employee. The **Scheduled** option can be clicked to schedule the task on the remaining required number of employees.
- represents tasks that are scheduled with violations. When you click the task, you can see the violation details in red in the task details window.
- represents tasks that are in progress. These task records don't display any options to **Reschedule** or **Unschedule**.
- represents tasks that are completed. These task records don't display any options to **Reschedule** or **Unschedule**.

6.1 Filter customer-specific tasks

In the Tasks view, each task record displays customer details. Tasks view lets you filter records specific to a customer. The Search filter provided in Tasks view can be used to filter content based on tags, or on partial or complete customer name or address.

You can select 'Include' or 'Exclude' from the **Search mode** and specify the required search keywords in **Search for tasks**. Keywords can be tags, address etc.); The default mode is 'Include' where the search result displays records matching the specified search keywords.

> **Example**
> If you specify the tag 'Noon' as the search key word and select **Exclude** as the **Search mode**, all tasks with the tag 'Noon' are excluded from the search results.

Search filter can be used in combination with other filters. For example, you can use search mode 'Include' and a customer name to filter out tasks scheduled for that customer, and then filter the search result further, based on the task type. To use another search keyword to search for a task with the currently selected date and period, close the current search filer, and start a new search.

To clear current filters including the selected date and period, click **Reset filters**.

6.1.1 How to filter tasks related to a customer

To search and filter tasks related to a specific customer in the Tasks view:

> The search filter returns results based on the customer name as well as the address. Thus a search using a keyword "Newman" can display task records with "Newman" mentioned as part of either the customer name or address.

1. Click to select the required date and period. The tasks for the selected date and period are listed.
2. Select **Search mode**. 'Include' is the default mode.
3. In **Search for tasks**, enter the customer name or address in full or part, as the search keyword. Tasks matching the search keyword, are filtered and displayed. The search appears as a filter above the search result.
4. Locate the required task and click the checkbox to select the task. The checkbox appears when you hover over a task record. You can see the **Selected tasks** bar at the top of the application window with **Show selected** , **Reschedule** and **Unschedule** options.
   Holding down the Shift-key while selecting a second task will select all tasks in between.

   > The Shift-key feature only applies for regular tasks, not for multi-day or multi-employee tasks.

5. Click **Show selected** to view only the selected tasks from the filtered tasks list.

6.2 Manage Tasks from Tasks view

Tasks view in the Operational Planner interface lets you schedule, reschedule or unschedule tasks from the **Tasks** tab.

Scheduled tasks that are in progress or completed, can't be rescheduled or unscheduled. For such tasks that are indicated by and in the Plan Board, map and Tasks view, the **Reschedule** and **Unschedule** options aren't available.

6.3 Tasks to schedule

The Tasks view provides access to the scheduled as well as the yet to be scheduled tasks. Details of each task is displayed in a separate task record.

Tasks that are yet to be scheduled and requires less than a business day can be filtered by Task kind **Task**. Tasks that span multiple days which are either partly scheduled or yet to be scheduled can be filtered by Task kind **Multi-day task**. You can choose a Task kind to filter and view the corresponding list of tasks.

On selecting a date, the following filters are displayed:

- **All** is the default filter where you can find the tasks that are to be scheduled at the top of the list of task records.
- **To be scheduled** provides quick access to all the tasks that are yet to be planned.
- **Not completed** lists the tasks that are not completed (including the tasks that are not yet scheduled).

You can select the **Search mode** and specify the required search keywords in **Search for tasks** to filter tasks based on customer name or address. For example, you can use **Search for tasks** to filter task records specific to a customer based on customer name or address. Use **Until** to specify the number of days, weeks or months. Based on your selections, the task list is updated.

6.3.1 How to select the tasks to be scheduled

To select the tasks that are yet to be scheduled in the Tasks view:

1. In the Tasks view, click **Reset filters** to clear current filters, if any.
2. Click to select the **From date**. Based on the selected date, the task view list tasks under three filters: **All**,**To be scheduled** and **Not completed**.
3. Optionally, you can enable **Ignore From date** to filter tasks ignoring the start date of the tasks. You can use **Until** to specify the number of days, weeks or months to be considered for filtering the tasks. Based on the selections made, the task lists are refreshed. Select the **To be scheduled** filter. This displays a list of tasks that are yet to be scheduled.

6.4 Schedule tasks

You can initiate task scheduling from Tasks view by clicking the **Schedule** button on a task record of a task to be scheduled. Whenever task scheduling is initiated from the Tasks view, the scheduling mode is enabled, and you are taken to the Plan Board view to complete the scheduling.

> To view shifts where you can schedule a task, click the task to view the task details window. The **Schedule** button in this window provides the option **Calculate proposals**. You can use this to view the shifts proposed by the application for the selected task. You can **Schedule** corresponding to the shift where you want to schedule the task.

The Plan Board supports scheduling with optimization as well as without optimization:

- Scheduling with optimization is triggered, when you drop a task on a resource shift to initiate task scheduling. The application identifies the appropriate location for the task on the resource shift, and optimizes the resource shift. The impact of optimization on the total time and distance of the resource shift is calculated and displayed.
- Scheduling without optimization happens when you drop a task at a specific position on a resource shift. The possible positions on resource shifts where a task block can be dropped are highlighted by a blue pin on the resource shifts.

6.4.1 How to schedule a task from Tasks view

To schedule a task from the Tasks view:

1. In the Tasks view, click **Schedule** button corresponding to the task. This triggers the scheduling mode and you are taken to the Plan Board view. The task block appears at your cursor and the Plan Board highlights the **Time window** of the task.
2. Locate the resource shift to schedule the task. The label **Matches task types and skills** indicates those resource shifts that match the task type and skill requirements of the task that you're trying to schedule.
3. For additional options, use the **Scheduling task** bar that appears at the top of the application window. If you want to cancel the scheduling process, click × on the **Scheduling task** bar.
4. Drop the task on the required shift. The task is scheduled and the impact of this change on the KPIs is displayed. The resource shift recalculates the scheduled time for all the tasks succeeding the rescheduled task.

> When you drag a task block to an empty space of any shift, the shift is highlighted and a label **Schedule task and optimize shift** is displayed. You can click to drop the task on the required shift. Such task scheduling triggers shift optimization.
>
> Optionally, to schedule a task without shift optimization, you can choose to drop the task block at any position highlighted by the blue pin on the required resource shift.

6.5 Reschedule tasks

On initiating a task reschedule from Tasks view, you're taken to the Plan Board view where you can identify the appropriate shift to reschedule the selected task.

6.5.1 How to reschedule a task

To schedule a task from the Tasks view:

1. Locate the task to be rescheduled.
2. Click the arrow adjacent to **Scheduled** button in the task record. The available task actions are listed.
3. Click **Reschedule**. The scheduling mode starts and you're directed to the Plan Board view. You can notice that a task block is available for being placed anywhere in the Plan Board.

> The **Scheduling task** bar appears at the top of the application interface. Click X if you want to close the panel and cancel the rescheduling operation.

4. Identify the shift to schedule the task. Resource shifts with the label Matches task types & skills indicates those resource shifts that match the task types and skills.

When you drag a task block to an empty space of any shift, the shift is highlighted and a label **Schedule task and optimize shift** is displayed. You can click to drop the task on the required shift. Such task scheduling triggers shift optimization.

Optionally, to schedule a task without shift optimization, you can choose to drop the task block at any position highlighted by the blue pin on the required resource shift.

5. Drop the task block at the required location in an appropriate shift in the Plan Board. The task is scheduled and the impact of this change on the KPIs is displayed. The resource shift recalculates the scheduled time for all the tasks succeeding the rescheduled task.
6. If the current task scheduling results in any task violation, verify the violation details and make the required changes to resolve the violation. See "Task Violations" on page 60 for details.

the current task scheduling results in any task violation, verify the violation details and make the required changes to resolve the violation. See "Task Violations" on page 60 for details. Optimize the scheduled tasks on the shift, if required. For details, refer to the topic on "Shift details" on page 51

6.6 Unschedule tasks

The task view can be used especially to:

- Unschedule task(s) related to a selected customer. You can use **Search for tasks** to filter task records based on a customer name. The required task records from the search result can be selected and unscheduled.
- Simultaneously unschedule one or more tasks belonging to multiple resource shifts. The task view can be used to select any task scheduled on any resource shift. The checkboxes corresponding to the required task records can be selected, and all the selected tasks can be unscheduled by selecting **Unschedule** from the top bar of the application interface that displays details about the selected resource shifts.

You can unschedule a scheduled task from the respective task details window.

If a single task is being unscheduled, no confirmation is asked before the task is unscheduled from the task details window.

6.6.1 How to unschedule task(s) scheduled for a customer

To unschedule tasks scheduled for a specific customer:

1. In the Tasks view, click **Reset filters** to remove current filters, if any.
2. Select the required date and period. The task view is updated with a task list showing both the tasks to be scheduled as well as all the scheduled tasks, for the selected date/period.

3. To filter tasks scheduled for a specific customer, use the **Search for tasks** filter to enter the customer name or address in full or part, as the search keyword. A list of scheduled and yet to be scheduled tasks for the customer is listed. The scheduled tasks can be identified from the status in the **Scheduled** column.
4. To select the tasks to be unscheduled, select the checkbox corresponding to the required task records. The top of the window displays **Selected tasks** along with the **Show selected** and **Unschedule** buttons.
5. To unschedule selected tasks, click **Unschedule**. A confirmation window appears.
6. Click **Unschedule**. All the selected tasks are unscheduled and the impact of this change on the KPIs is displayed.

6.6.2 How to unschedule a specific task

To unschedule a task from the Tasks view:

1. In the Tasks view, click **Reset filters** to remove current filters, if any.
2. Select the required date and period. The task view is updated with a task list showing both the tasks to be scheduled as well as all the scheduled tasks, for the selected date/period.
3. To unschedule a task, click the arrow adjacent to **Scheduled** button in the task record. The available task actions are listed.
4. Click **Unschedule**. The task is unscheduled and the impact of this change on the KPIs is displayed.

6.6.3 How to unschedule multiple tasks from Tasks view

To unschedule multiple tasks from the Tasks view:

1. In the Tasks view, click **Reset filters** to remove current filters, if any.
2. Select the required date and period. The task view is updated with a task list showing the tasks to be scheduled as well as the tasks that are currently scheduled for the selected date/period.
3. Select the checkbox corresponding to each task record to be deleted. The top of the application window displays **Selected tasks** along with the **Show selected** and **Unschedule** buttons.
4. To unschedule the tasks, click **Unschedule**. A confirmation window appears.
5. Click **Unschedule**. All the selected tasks are unscheduled and the impact of these changes on the KPIs is displayed.

7 Dashboard

Dashboard in ORTEC FS **Operational Planner** provides a collection of visual reports to monitor and analyze performance. The statistics are based on scheduled as well as the yet to be scheduled tasks, and are based on the current date.

You can select any date from the calendar to view the corresponding details and use **Refresh** button to refresh the page.

> Except for the details listed under **Tasks to schedule**, all other reports are based on the scheduled tasks.

Details displayed includes:

- **Task activity time violations**: Includes all appointment / time window violations that are more than 5 minutes in duration.
- **Execution of task activities**: Provides the count of tasks to be executed as well as the count of tasks that are in progress, or were aborted, interrupted, or completed.
- **Key performance indicators (Averages)**: Provides an insight to the average values of task activities per shift, travel time per task activity, and the distance per task activity. To change the unit of distance used, select the required **Distance unit** (miles or kilometers) from your user profile menu.
- **Utilization rate**: Displays the total available time as well as the total time spent on tasks, travel, and breaks. If the feature is enabled, the total blocked time is also displayed.
- **Tasks to schedule**: Provides a count of **Regular tasks**, **Multi-day tasks**, and **Multi-employee tasks** with an appointment or time window ending on the selected date. You can also specify one or more task types in **Task types** list to view statistics based on only the selected task types.

7.1 How to use the Dashboard

To view the dashboard reports:

1. Go to **Dashboard**. The page displays the details based on the current date.
2. Click to select the required date from the calendar. The dashboard is updated when you change the date. Use the arrow icons to go to the previous or next day.
3. (Optional) To generate statistics based only on selected task types, in the **Tasks to schedule** section, select the required task types in the **Task types** list.

8 Shift details

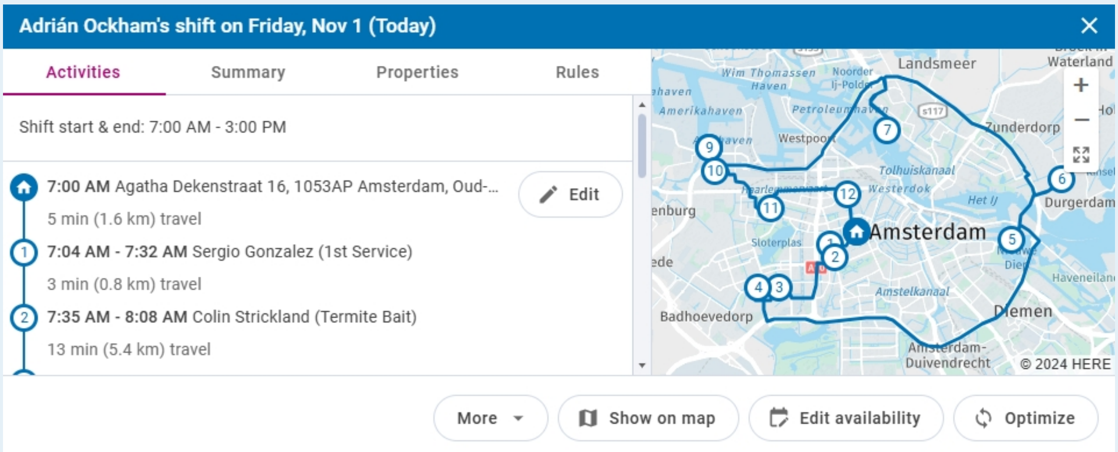
View the details of employee shifts in three different ways:

- On the **Plan board** tab, click on the white space of a shift.
- On the **Map** tab, click on a route.
- In the task details window of any scheduled shift, click the **Show shift** button in the bottom-left corner.

The shift details window shows all scheduled activities and a map of the employee's shift route, along with tabs and action buttons. You can move and zoom in and out on the map, but you cannot change the route (this can only be done on the Map tab). The employee name and the date of the shift are shown in the header of the window.

Shifts with a multi-day task scheduled on it for the entire shift duration, displays all the tabs mentioned below, but has only the **Show on map** and **Edit availability** action buttons.

Example



8.1 Activities tab

Provides a sequential list of scheduled activities on the shift, including non-task activities such as breaks and travel. Icons indicate task status. You cannot edit the tasks (with start and end time, customer name, task type, the stop number in the route, and potential violation), break information (duration and time window), unavailabilities (only shown if they have a location, unavailabilities without a location are included in the activity or travel), and travel time and distance.

The information on the **Activities** tab can either be specified on:

- The employee in the **Resource Manager**, when OFS generates the shifts.
- On the shift, when the organization sends the shifts via API.

Via the **Edit** button you can edit the start and end time, as well as start and end address location of the shift.

- **Start time / End time**: After editing the Start and/or End time of the shift, you can go back to the default values by clicking the checkbox **Use default shift times**. The default values are either the properties defined on the employee in the Resource Manager, or the original properties defined on the manually created shift.
- **Start address / End address**: There are three address options: (1) Department address, set on department level, this cannot be changed manually, (2) Employee address, set on employee in the Resource Manager or in external system, this cannot be changed manually, and (3) Custom address, which can be defined manually.

8.2 Summary tab

Provides an overview of key performance indicators for this shift:

- **Available time:** Adjusted for unavailabilities.
- **Available distance:** Shown only if a maximum distance applies for this shift.
- **Time breakdown for all different activity types:**
  - Includes activity time, break time, and total time.
  - Breaks may occur separately or during activities/travel, depending on the planning of the shift.
  - Unavailabilities are excluded from this breakdown.
- **Total:** Displays the total time spent on activities and breaks during the shift.

8.3 Properties tab

Provides details about shifts, including:

- Shift tags
- Allowed task types
- Required employee skills
- Assigned vehicles

Shift information is defined in two ways:

1. **Automatic Shift Generation:** Shifts are created in the **Resource Manager** by OFS. Only the employee's name and date are displayed in the top-left corner of the **Shift Details** window.
2. **External System:** Shifts are supplied to OFS via API.

> - Shifts created manually via the API or **Operational Planner** are marked in the top-left corner of the **Shift Details** window.
> - Only manually created shifts can be deleted.

Use the **Edit** button to modify task types, skills, tags, and vehicles.

- Delete properties by clicking the **X** displayed behind the property.

- Select or deselect properties using drop-down menus. You can recognize already assigned vehicles with the indication **(assigned)** behind the license plate. If you choose an assigned vehicle, you get a notification to whom the selected vehicle is assigned as well.
- Go back to the default values by clicking the checkbox **Use default [value]**. The default values are either the values defined on the employee in the Resource Manager, or the original values defined on the manually created shift.

8.4 Rules tab

> As not all organizations implement time slotting, ignore the related information if it's not applicable.

Displays the rules defined on this specific shift: the applicable task duration factor, the permitted travel time outside shift hours, the maximum allowed total distance, and the break rules applicable for the shift and considered during task scheduling. When editing, you can use the checkboxes at the top to specify whether to include the shift for optimization and time slot calculation. By default, all shifts are included for optimization and time slot calculation. Those shifts that are excluded from optimization can be identified, in the top-right corner of the shift, by and those excluded from time slot calculation can be identified by in the Plan Board.

On a shift that has been excluded from optimization, tasks can only be manually planned on this shift. On a shift that has been excluded from time slot calculation, no time slots will be returned for this shift after a time slot request.

> With 'Extended duration of started activities' enabled, the checkbox 'Ignore extended duration' is added. This allows you to exclude this specific shift from the extended duration logic as explained in "Plan board" on page 10.

Via the **Edit** button you can edit 'Include for optimization', 'Include for time slot calculation', 'Task duration factor', 'Travel time outside the shift', 'Maximum distance', and 'Minimum available time'. Break rules cannot be edited, as they are defined on department level and are equal for all employees.

Go back to the default values by clicking the checkbox **Use default [value]**. The default values are either the values defined on the employee in the Resource Manager, or the original values defined on the manually created shift.

> The tasks scheduled in a shift can be optimized even when the shift is excluded from optimization. Contact your ORTEC representative on how you can configure optimization and time slotting.

- Each property has a checkbox to use the default value. This default value is assigned to a shift via the API or shift generation process. If the default value is not set, updates from the API or shift generation won't change the property's value unless the 'default' checkbox is checked.
- ORTEC can deactivate the editing feature. If shift times and addresses are not editable in the application, they will remain non-editable at the shift level, including any new properties.

8.5 Action buttons

At the bottom of the window, the following action buttons are provided:

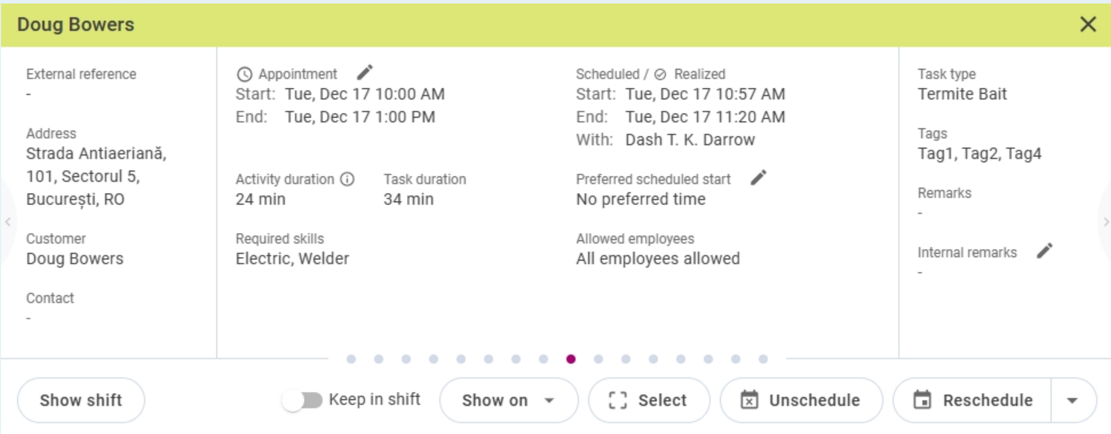
- **More**: You can click to access the actions:
  - **Select all tasks**: Click to select all the scheduled tasks in the shift.
  - **Unschedule tasks**: Click to unschedule all the scheduled tasks in the shift.
  - **Keep all tasks in shift**: Click to retain all the scheduled tasks in the shift. When enabled these tasks cannot be rescheduled to other shifts in an upcoming optimization. To disable the option again, use **Deactivate 'keep all tasks in shift'**. For example, when you want to unschedule all tasks from the shift. To disable this option for an individual task, use the **Keep in shift** toggle in the Task details window.
- **Show on map** or **Show on plan board**: Click to easily toggle between viewing the shift on map or on plan board.
- **Edit availability**: Click to edit employee availability at the top of the window. You can select an unavailability type and specify the date and time when the field service employee isn’t available. You've can also add remarks about the unavailability. For more information, see "Unavailabilities" on page 62.
- **Optimize**: Click to optimize the tasks scheduled on the selected shift. It will not unschedule or add new tasks. You can optimize the shift regardless of whether it's excluded from automatic scheduling. Where optimization is possible, the scheduled tasks are optimized and the times are recalculated. The impact of optimization on key performance indicators such as total shift distance and total shift time is displayed.

9 Task details

The Operational Planner application supports viewing the task details from **Plan board**, **Map** and **Tasks** tabs. Before scheduling, rescheduling or unscheduling tasks or while resolving tasks with violations, you may want to refer to the details of the task. You can click on a task block on the **Plan board**, a task address on the **Map** or on a task listed in the **Tasks** view or **Tasks to schedule** panel. The window displays the task title in the same color as the legend for that task type.

Example

Use the arrows on the left and right of the window to either go to the previous or next task. The bullets indicate which task in the shift you are currently in. Click on a bullet to go to a specific task.



The **Task details** window is divided into four sections: customer information, task planning information, task properties information, and action buttons.

9.1 Customer information

In the left pane, view the customer details including address, customer name and contact number, where available. If a mail or calling application is configured, you can contact the customer by clicking the e-mail address or the phone number.

The **External reference** at the top is a unique identifier for the task. If you've access to the organization's backend system, the link can be clicked to access or update the details. A copy button is available to copy this reference.

9.2 Task planning information

In the middle section, view the information that is needed for the planning of the task.

- **Time window / Appointment**: The period in which the task is or needs to be scheduled. The time window can be multiple days or months (often as defined in the Service Level Agreement). Once the task is finalized, time window details are replaced by appointment details. This appointment period can be max one day, which is stricter than the time window. An appointment overrules a time window.

  Click the pencil icon to make changes to an appointment period. A time window cannot be adjusted from here.

  > Ask your ORTEC representative if the editing feature is not available to you.

  - In most cases, it's configured so that tasks with appointments are automatically scheduled when sent to OFS. The task must start within the appointment period but does not have to finish within this period. If you manually adjust an appointment using the pencil icon, the system will not reschedule the task automatically.

  - If department time slots were defined (via **Support Manager** > **Manage departments**), you can choose from **Appointment** time slots, or set a custom start and end time.

- **Task calendar**: This link is only visible for those tasks with 'Excluded dates' when it cannot be planned; the link can be clicked to view the **Task calendar** that displays the dates and time periods during which the task can be planned and the dates when the task cannot be planned.

  > **Example**
  >
  > When a building where the task need to be performed has specific opening times, the task must not only be started but also completed within the time defined in this calendar.
  >
  > You will need to include this information in the API message for the task, as it cannot be adjusted in OFS.

- **Activity duration**: When there is a break during the task, it is the break duration and task duration combined.
  - Activity duration is calculated based on the task duration by applying the task duration factor, if any, associated with the shift. The hover-over text provides details on the default task duration and the applicable task duration factor.

  - With 'Extended duration of started activities' enabled, the extra time added beyond the scheduled end is shown in red.

- **Task duration**: The **Task duration** refers to the planned duration for the task.
- **Required skills**: The skills required for handling this task type.
- **Scheduled / Realized**: This displays the scheduled or realized start and end time, and the employee with whom the appointment is scheduled. A realized task can be recognized by the realization icon in front of this information.
- **Preferred scheduled start**: You can click the pencil icon to specify a preferred start time. The preferred start time overrules the time window or the appointment time of the task. The task will remain scheduled at this time during optimization. Tasks with a preferred scheduled start time are highlighted by a star icon on the plan board.

- **Allowed employees**: This lists the employee(s) allowed to handle the specific task. The optimizer can only schedule this task on these employees. You can manually assign it to others, but it will result in violations.

9.3 Task properties information

In the right pane, view the information about the properties of the task.

- **Task type**: Indicates the type of the task.
- **Tags**: Tags associated with the shift are displayed here. You can filter shifts based on their tags. For example, morning shifts can be indicated by an 'AM' tag and evening shifts can have a 'PM' tag.
- **Remarks**: Remarks associated with the task, if any, are displayed here.
- **Internal remarks**: Remarks shared between planners in the Operational Planner only. Click the pencil icon to make changes.

9.4 Action buttons

- For a task that's yet to be scheduled, the Task details window displays only the **Schedule** button that can be clicked to schedule the task, and the **Show on** button.
- For a scheduled task that's in progress or completed, the **Reschedule** and **Unschedule** buttons in the Task details window, aren't enabled.

In the bottom section, the following buttons are displayed:

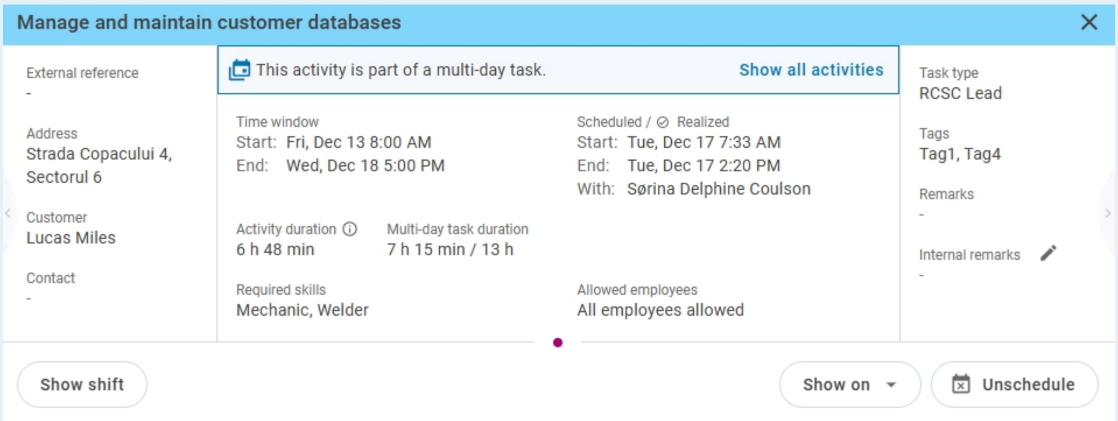
- **Show shift**: Click to view the shift details. Refer to "Shift details" on page 51 for more details.
- **Keep in shift**: Enable this toggle to keep the task in the same shift. While the position of the task on the shift can change, the task is retained on the shift until you disable the option. When enabled, the message 'Keep in shift' is shown in the top-left corner of the window, and with the same lock icon on the task in the Plan board.
- **Show on**: Click to view the task on either the Plan Board or the Map.
- **Select**: You'll go back to the Plan board where you can select one or more tasks, while at the top the **Unschedule** and **Reschedule** options are displayed. Selected tasks will get a blue border. After selecting multiple tasks you can unscheduled or reschedule those tasks all at once.
- **Unschedule**: Click to unschedule the task(s). The task is unscheduled and will appear in the **Tasks to schedule** overview. No confirmation is asked before a task is unscheduled. Task unscheduling can't be reversed.
- **Reschedule**: Click to trigger the scheduling mode so as to reschedule the task from the Plan board view. You can use the **Reschedule** option to manually reschedule or choose **Calculate Proposals**. **Calculate Proposals** displays a maximum of ten shifts proposed for rescheduling the task. ORTEC FS provides proposals based on various calculations. The task can be rescheduled on any of the proposed shifts by clicking the **Schedule** button, or on any other shift.

9.5 Task details window of a multi-day task

The task details window of a scheduled multi-day task displays a **Show all activities** button. You can click on it to view all the activities associated with the task and the corresponding duration and scheduled dates.

In the case of a multi-day task, task duration refers to the duration of the activity handled on the specific shift. For example, a **Multi-day task duration** of '3 h 30 min / 13 h' indicates that the part of the task being handled by the specific shift is only for 3 hours and 30 minutes while the actual task duration is 13 hours.

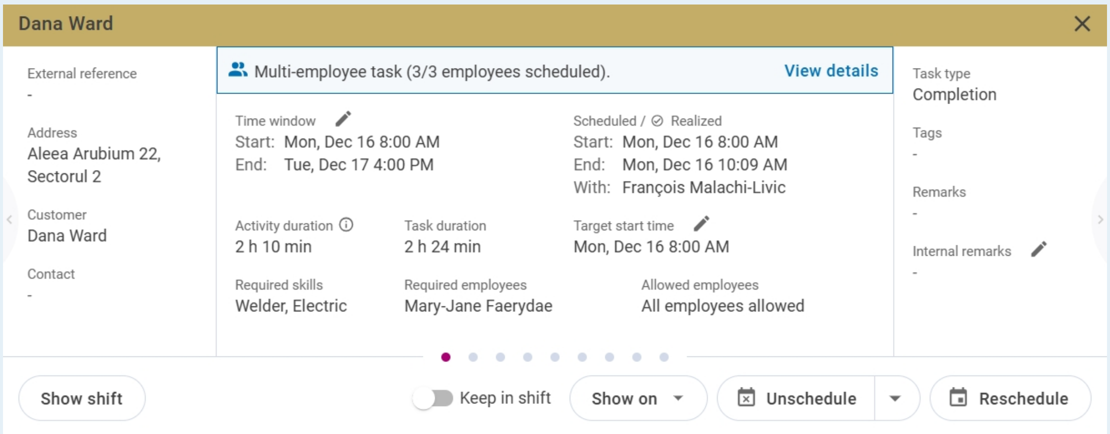
Example



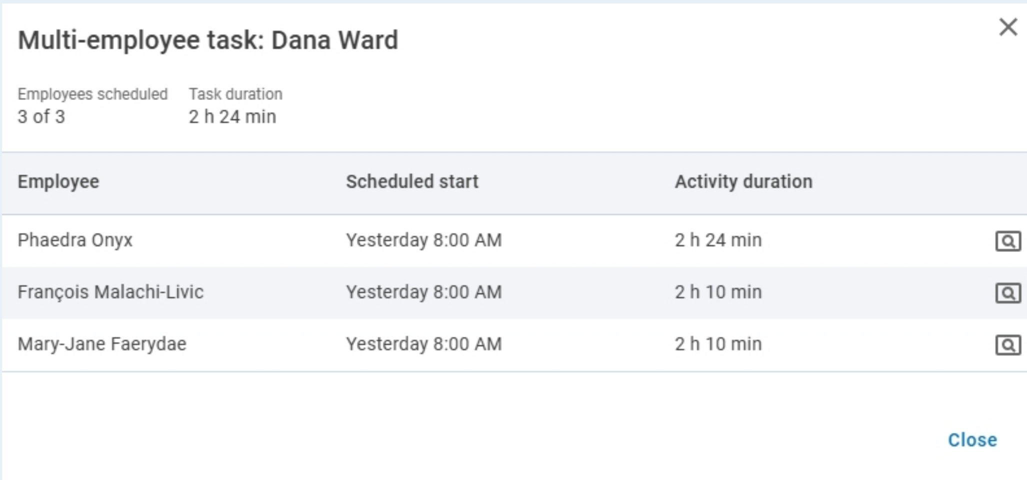
9.6 Task details window of a multi-employee task

The task details window of a scheduled multi-employee task displays details including links to related multi-employee task details, and realizations of tasks. When the related tasks are available outside the current filters, a confirmation dialog is displayed to confirm if the filters can be removed before navigating to the selected employee.

Example



- **View details** option provides a list of all employees assigned with the mutli-employee task, along with the option to view the corresponding task activity details.



- Click the arrow on the **Unschedule** button to unschedule this task from this employee or from all employees. Clicking **Unschedule** will unschedule this task from this employee.
- The **Target start time** can be changed by clicking the edit icon (this is not available if the task is in progress).

10 Task Violations

Task violation indicates cases where a task that's scheduled don't conform to one or more of the business rules. For example, a scheduled task can show a task violation if the resource to whom that task is assigned isn't available on that particular day.

In Plan board and Tasks views, each task with a violation is indicated by a red flag . In the Map view, a circle on a route with an encircling red border such as 10 indicates a scheduled task with one or more violations. The number in this example, indicates the sequential position of the task in the shift. You can hover over the task to view the task summary that highlights the reason for task violation.

10.1 Reasons for task violations

Details of a task violation can be found in the task details window. You can click on a task showing a violation in the Plan board, Map or Tasks views. The task details window that's displayed shows the reason of task violation in red.

> Task violations that are less than 5 minutes in duration aren't highlighted but the task summary displays the reason for such violations in orange.

To address a task violation, you can choose to reschedule that task or other task(s) in that resource shift. You can also choose to ignore a task violation and retain the scheduled task, as is, on the shift.

> **Example**
>
> In a situation where a task is showing a violation as it's scheduled after the appointment time agreed with the customer, you can consult the customer on their availability or about their opinion on rescheduling the task. You can also decide to retain that task without resolving the violation.

Some of the common scenarios that can result in a task violation includes:

- **Scheduled too early (before time window)**: When a task is scheduled before the scheduled time window.
- **Scheduled too late (after time window)**: When a task is scheduled after the scheduled time window.
- **Scheduled too early (before appointment)**: When a task is scheduled before the appointment time.
- **Scheduled too late (after appointment)**: When a task is scheduled after the appointment time.
- **Unavailable**: When a task is scheduled outside task calendar.
- **Scheduled resource unavailable**: When a resource to handle a task is not available.
- **Scheduled too early (before preferred scheduled start)**: When a task is scheduled before the preferred scheduled start time.
- **Scheduled too late (after preferred scheduled start)**: When a task is scheduled after the preferred scheduled start time.

- **Multi-employee target start time too early**: When a multi-employee task(s) is scheduled before the target start time.
- **Multi-employee target start time too late**: When a multi-employee task(s) is scheduled after the target start time.
- **Scheduled too early**: When a task is scheduled too early. Used for employee unavailability time window.
- **Scheduled too late**: When a task is scheduled too late. Used for employee unavailability time window.
- **Required employees**: When required employees are missing on a multi-employee task.
- **Task type not allowed**: When a task type is not allowed on the shift.
- **Scheduled employee not allowed**: When a schedule employee is not allowed.
- **Shift missing required skills**: When required skills are missing for the task.

> Some of the scenarios that can result in a shift violation includes:
>
> - **Finish time too late**: When the shift ends too late.
> - **Maximum distance exceeded**: When the maximum distance is exceeded.
> - **Minimum available time exceeded**: When the minimum available time is insufficient.

11 Unavailabilities

You can mark an employee as unavailable, preventing tasks from being scheduled during that time.

Create an unavailability by navigating to a shift of an employee ("Shift details" on page 51) or by selecting one or more employees in the employee panel ("Employee panel: Search and filter employees" on page 10) and selecting the **Edit availability** button.

When creating an unavailability, you can fill in the following fields:

- (Required) **Type**: There are 5 predefined types which you cannot edit.
- (Required) **Start and end time**
- (Required) **Start and end date**
- (Optional) **Location**: When an unavailability with a location falls entirely within a shift, OFS will calculate the travel time to and from the unavailability. If you add a location and work with realizations, the unavailability also needs to be realized. Otherwise, it will be pushed behind realized tasks.
- (Optional) **Employees**: Search for more employees if you want to add them to this unavailability. If you create an unavailability for multiple employees, you cannot edit it for individual employees, but it can be deleted for them individually.
- (Optional) **Remarks**: Add remarks to the unavailability. For example, Dentist or Tire Change Car.

11.1 Unavailabilities with location

Unavailabilities with a location (appointments or events tied to a specific address) are handled as follows:

- An unavailability with a location can begin before the shift's start time.
  - Travel to this unavailability can also start earlier than the allowed travel time before the shift begins, ensuring the unavailability is reached on time.
  - The unavailability at the start of the shift is treated as a planned activity, so the route begins by traveling from this first activity to the next one.
- When shift start time, shift finish time, or the Employee id of a shift changes, unavailabilities with address will be planned or unplanned to correspond to the new shift times or employee.
- The unavailability finish time is not extended for breaks or regular unavailabilities (e.g. parental leave).
- Unavailabilities with a location are not planned or used to determine travel in the following cases:
  - When the unavailability ends before the shift's start time or begins after the shift's end time.
  - When the unavailability only overlaps with a regular unavailability at the start or end of the shift.

Visual cues

- If travel to an unavailability with a location is delayed and will not arrive on time, the travel path is shown on the map with a red dashed border as a warning.
- When hovering over travel to an unavailability with a location, the tooltip includes the destination address for better context.
- Violations related to unavailabilities with locations are shown both on the map and in the Shift details view, making it easy to identify and address scheduling issues.

12 Realizations

Realizations enable real-time updates to your planning (which means tasks can move in the planning), but cannot be applied directly in the plan board; they must be sent to OFS from an external system. Tasks need to be realized in the correct order to avoid OFS recalculating travel times. Also, if tasks are realized in an unusual order, this can result in a temporary planning discrepancy. For example, if the second task is realized before the first, the first task will temporarily be planned after the second.

All tasks, multi-employee tasks, and multi-day tasks need to be realized. When using both realizations and unavailabilities with an address, those unavailabilities with an address must be realized too. Otherwise, the travel to the unavailability with an address will be pushed forward in planning.

12.1 Viewing realizations in the Plan board

- Realized tasks are marked with an icon in the bottom-left corner of the activity.
- Refer to the legend for an explanation of realization icons.
- Open a realized task to view realization details, including:
  - Status, shown in the top-left corner.
  - Scheduled and realized start/end times.
  - A special icon indicates when a task is completed.

12.2 Handling realized tasks

Once a task is realized, it cannot be moved within the planning.

12.3 Tracking time differences

If the realized task duration differs from the scheduled time, the activity duration will be noted.

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.