Direct Planning

## Administrator and User Guide

# Direct Planning

**Planning software for industry, project management or service**

*Version 3.7*

http://www.directplanning.com

www.volume-software.com

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VOLUME® SOFTWARE

4 Rue Albert Dennery – BP 2630
37026 Tours cedex 1
France

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# 1. Overview

Direct Planning is a scheduling software designed for the industry, project management and service. Choosing the right edition for your sector provides an efficient management of various resources such as machines (in Industry mode), rooms (in Service mode) or employees (in Project mode).

Direct Planning's interface includes a Gantt visualisation which allows to view quickly and clearly the scheduled jobs.

In addition to supporting data imports and exports from/to your information system (ERP, CAPE), Direct Planning can also work independently, notably for calculating setting times and work rates.

This documentation will allow you to familiarise yourself with Direct Planning, starting with its installation and the discovery of our demonstration schedules. We will then discover Direct Planning's key principles and see how to create schedules and plan jobs with Direct Planning. Last, we will explain how to interface your ERP with Direct Planning and address Direct Planning's main administrative tasks.

This documentation is aimed primarily at new users of Direct Planning. If you already know Direct Planning and wish to discover the new features included in our last update, we invite you to read the following page: http://www.directplanning.com/en/news/news-product.

To help you navigate through this documentation, the sections specifically dedicated to the administration and useful tips are highlighted in the following boxes:

**Administration**

The sections reserved to the Direct Planning administrator are displayed in this box.

**Our advice**

Our useful tips are displayed in this box.

# 2. Installing and exploring Direct Planning

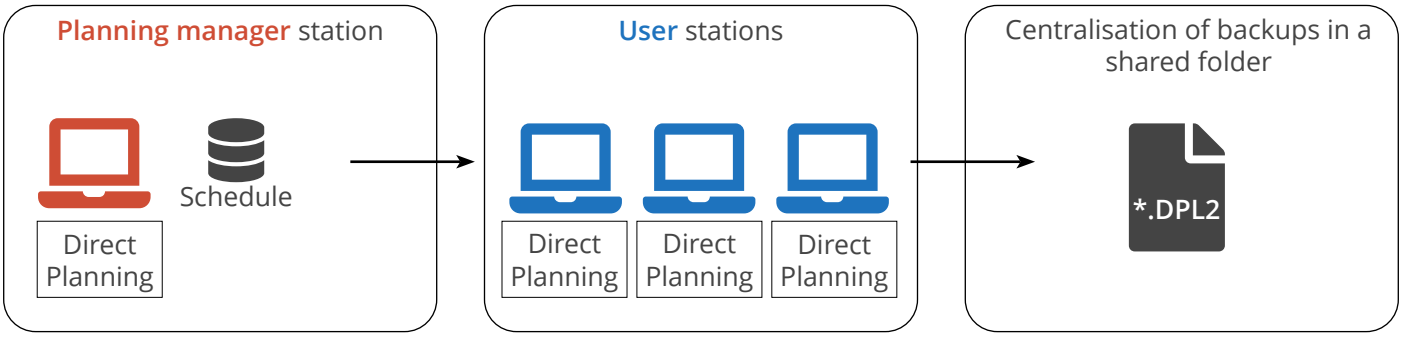
## 2.1. Installing Direct Planning

To view the technical requirements for installing Direct Planning, please see the FAQ available on Direct Planning website at http://www.directplanning.com/en/faq/.

### 2.1.1. Setup architectures

There are **3 architectures** available for installing Direct Planning, which you will choose depending on your infrastructure and/or your needs.

Minimalist architecture




Direct Planning is installed on the planning manager station.

The planning **database** is hosted on this station.

The planning manager has a **fast station** (Core i5 class CPU and at least 4-8 GB RAM) preferably equipped with two screens.

Direct Planning is installed on each user station.

Users access the schedule hosted on the planner station.

**Caution**: The planning manager station must be running to ensure the availability of the schedule to other users.

Each backup of the schedule creates a **time-stamped backup copy** hosted in a shared folder on a server of the company.

If the planning manager station crashes, the last backup copy restores the planning without information loss.

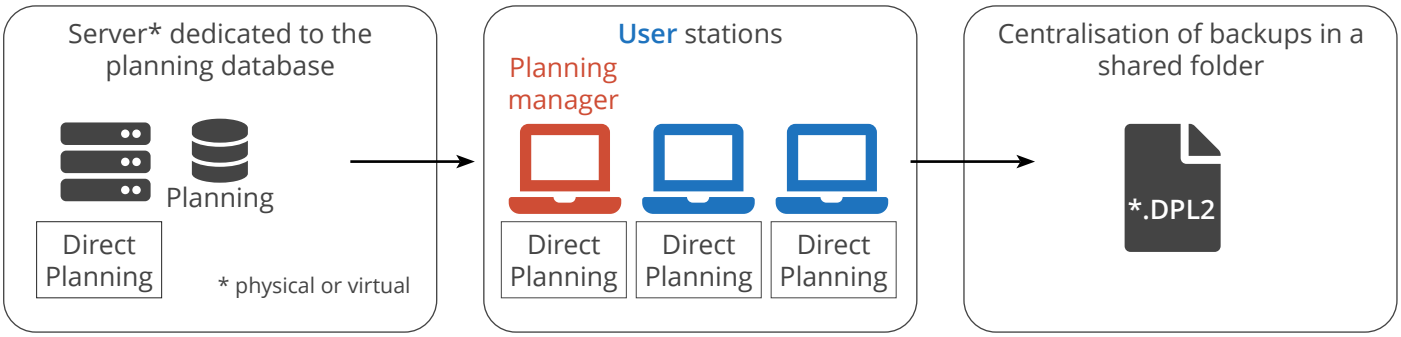
**Benefits:**

- **No server** required

**Our advice**

Keep this configuration for environments which have a very limited number of users (2 or 3 maximum).

## Dedicated server architecture




Direct Planning is installed on a **physical or virtual dedicated server**.

The planning **database** is hosted on this server.

It is best that this server and users share the same site (shorter access times).

Direct Planning is installed on each user station (in "lightweight" mode).

Users access the schedule hosted on the dedicated server.

The planning manager has a **fast station** (Core i5 class CPU and at least 4-8 GB RAM) preferably equipped with two screens.

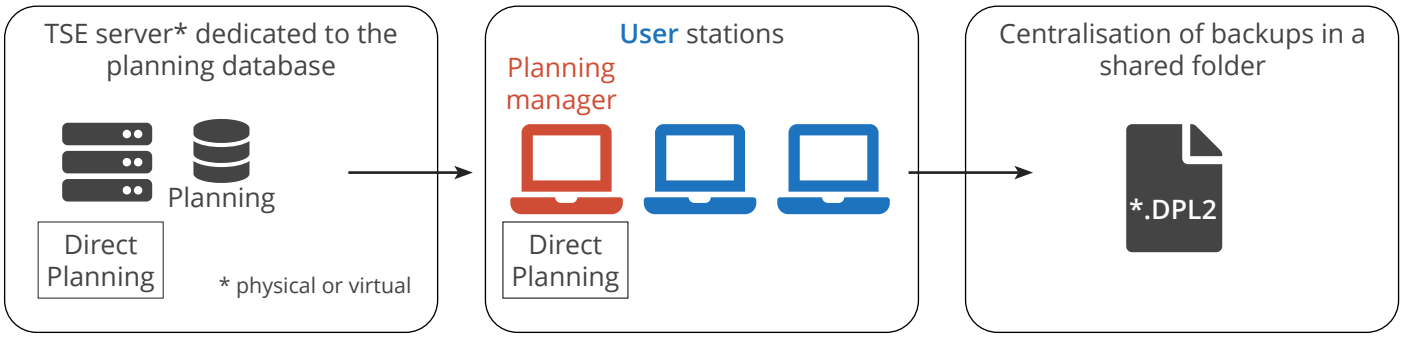
Each backup of the schedule creates a **time-stamped backup copy** hosted in a shared folder on a server of the company.

If the database server crashes, the last backup copy restores the schedule without information loss.

**BENEFITS:**

- **Scalable** architecture
- Schedule available even if the planning manager station is **powered off**.

## Dedicated TSE server architecture




Direct Planning is installed on a **physical or virtual dedicated TSE server**.

The planning **database** is hosted on this server.

It is best that this server and users share the same site (shorter access times).

Direct Planning **is not** installed on user stations: Users access the schedule using a "remote desktop" connection or via a "published application".

Each backup of the schedule creates a **time-stamped backup copy** hosted in a shared folder on a server of the company.

If the database server crashes, the last backup copy restores the schedule without information loss.

### Benefits:

- **Scalable** architecture
- Schedule available even if the planning manager station is **powered off**.
- **Easier monitoring** of updates (only 1 centralised installation of Direct Planning to update + the planning manager station, where appropriate).

### Our advice

You can still install Direct Planning locally on the planning manager station (powerful station and shorter response times).

## 2.1.2. Schedule types

According to the needs related to your activity, Direct Planning comes in 3 editions: Service, Project and Industry.

### Service mode

You have simple requirements: for example, you will implement a schedule for booking rooms, vehicles, appointments or vacations.

Choose the Service mode, suitable for service activities.
Numerous elements, data and colours can be customised to adapt Direct Planning to your business.

### Project mode

You need to manage successions of jobs as well as planned and actual durations?

The Project mode is suitable for schedules requiring links between various jobs: for example for building projects, deploying IT resources or monitoring marketing milestones.

### Industry mode

You need to manage quantities, setting times and work rates?

Direct Planning is also particularly suited for the industrial sector: it supports linear or complex routes subject to time constraints (earliest start and latest end).
Its integrated manual planning assistance respects automatically these constraints.
The Industry mode is particularly well suited for SMIs looking to plan and track their production with the best levels of accuracy.

## 2.1.3. Comparative table of offers by features

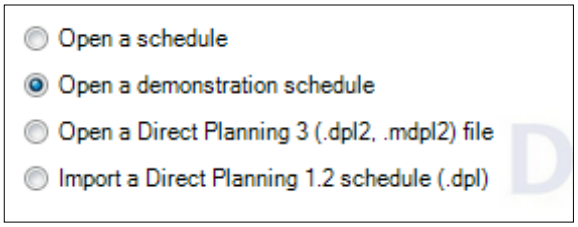
| Type of schedule authorised according to offer | Service | Project | Industry |
|---|---|---|---|
| Creation of a **Service** schedule | ✓ | ✓ | ✓ |
| Creation of a **Project** schedule | ✗ | ✓ | ✓ |
| Creation of an **Industry** schedule | ✗ | ✗ | ✓ |

| Features | Service | Project | Industry |
|---|---|---|---|
| Login/password-protected access | ✓ | ✓ | ✓ |
| Customisable data depending on your business | ✓ | ✓ | ✓ |
| Customised screens by user | ✓ | ✓ | ✓ |
| Customisable visual indicators | ✓ | ✓ | ✓ |
| Lockable job | ✓ | ✓ | ✓ |
| Multiple planning alerts | ✓ | ✓ | ✓ |
| Calendar by resource/machine | ✓ | ✓ | ✓ |
| Customisable data lists | ✓ | ✓ | ✓ |
| Export to Excel/OpenOffice | ✓ | ✓ | ✓ |
| Import/Export of data with an ERP | ✓ | ✓ | ✓ |
| Links between jobs/operational routes | ✗ | ✓ | ✓ |
| Time constraints (earliest start, latest end) | ✗ | ✓ | ✓ |
| Planning assistance with respect of constraints | ✗ | ✓ | ✓ |
| Tracking of planned/actual times | ✗ | ✓ | ✓ |
| Job progress status | ✗ | ✓ | ✓ |
| Workload histogram | ✗ | ✓ | ✓ |
| Production operations based on machines | ✗ | ✗ | ✓ |
| Production technical data | ✗ | ✗ | ✓ |
| Setting times and work rates defined by machine/operation | ✗ | ✗ | ✓ |
| Automatic calculation of the jobs operational durations | ✗ | ✗ | ✓ |
| Production declaration by the machine operator | ✗ | ✗ | ✓ |
| Production declaration through dialogue with the ERP | ✗ | ✗ | ✓ |

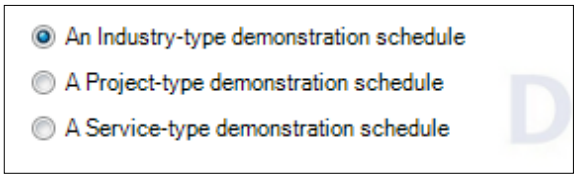
# 2.2. Discovering our demonstration schedules

To access our demonstration schedules, open Direct Planning and follow these steps:

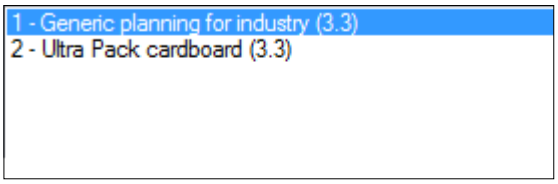
1. Click on **File** > **Open a demonstration schedule**.



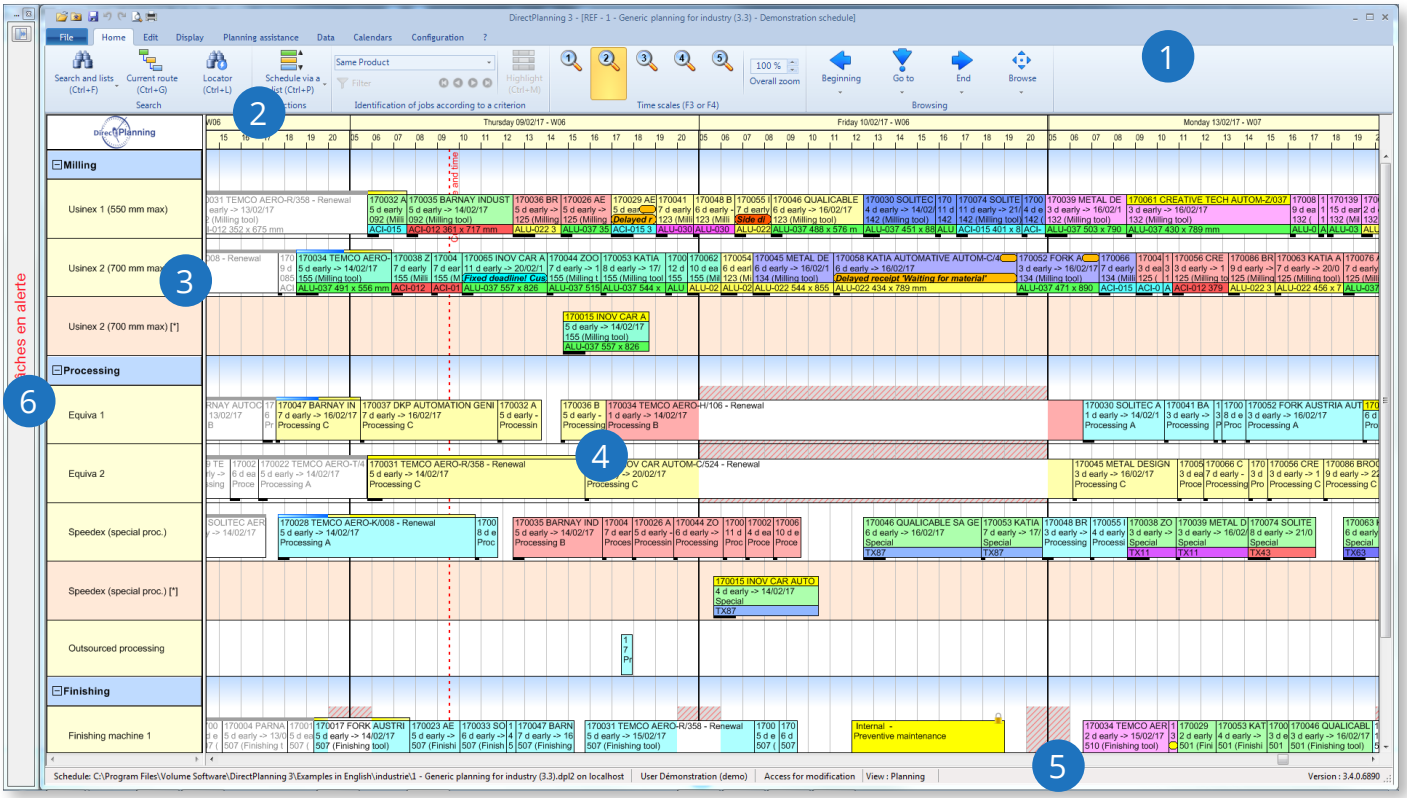

2. Select **An Industry-type demonstration schedule** and click on **Next**.




3. Choose option **1 - Generic for industry** and click on **Open this schedule**. Enter your login and password and click on **OK**.



The following window opens:

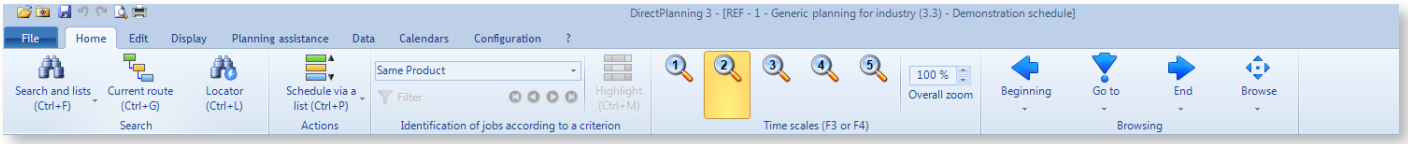



The Direct Planning window consists of 6 main areas:

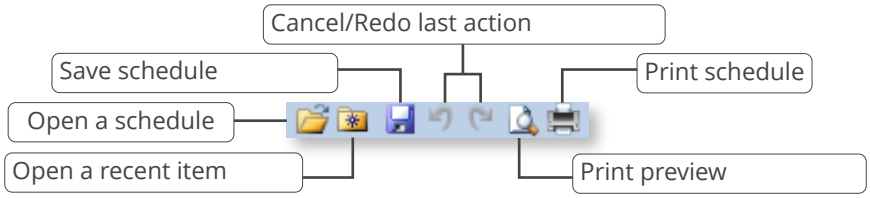
| | |
|---|---|
| 1 | Menu bar/Toolbar: gives access to all Direct Planning functions, grouped by thematic tabs. |
| 2 | Time scale: used to find your way in the schedule and place your jobs where you want. |
| 3 | Projection: defines what is displayed in the schedule lines.<br>In the context of a shop floor, the projection usually displays the machines grouped by sections. |
| 4 | The schedule itself. It is the workspace where your jobs are organised. |
| 5 | Status bar: shows the name of the schedule, its location, the current user, the access type and the view currently displayed. |
| 6 | The floating alert window gives an holistic view of job alerts. |

The following sections discuss in details each of these areas.

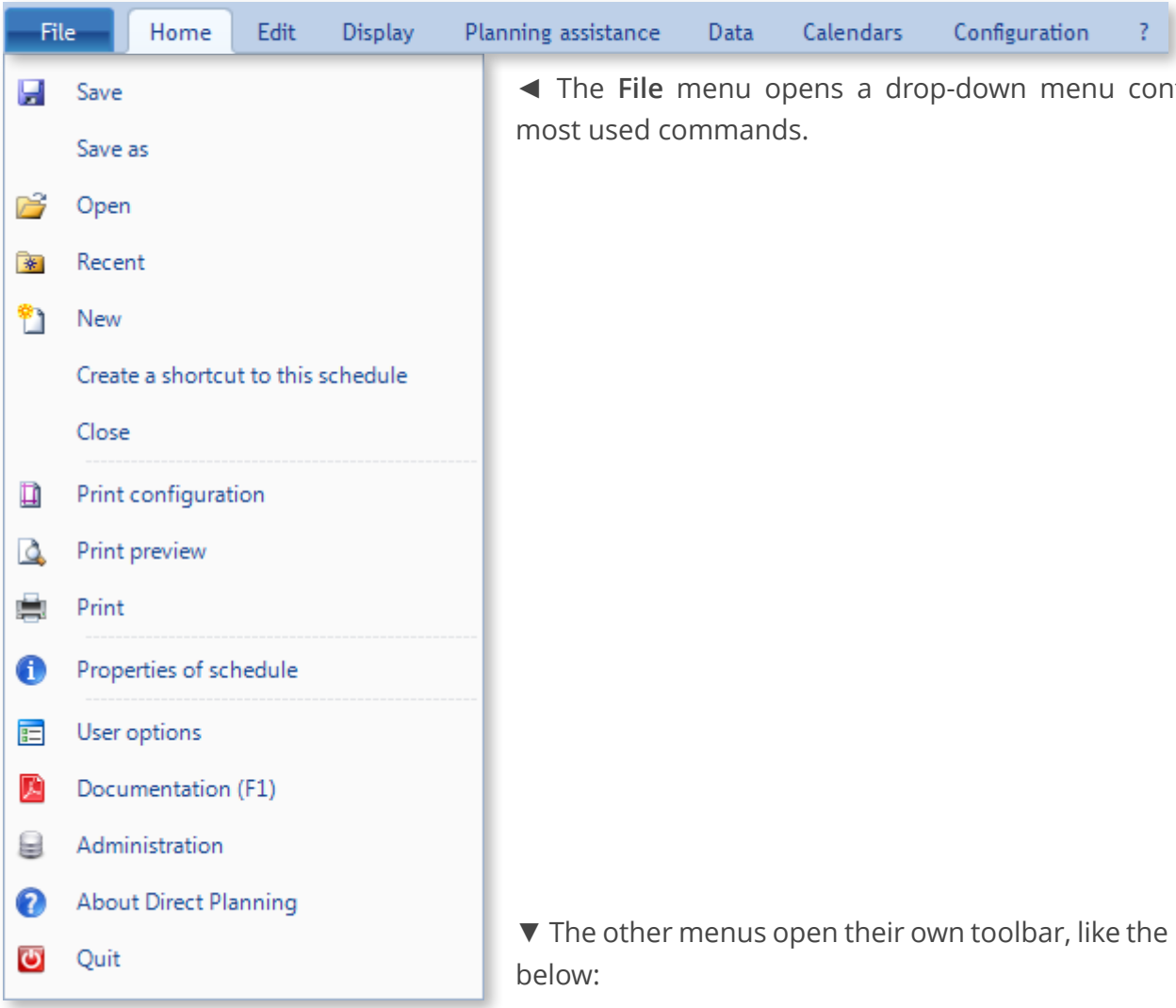
# 2.2.1. The menu bar and toolbar




At the very top, the typical icons used in all applications:

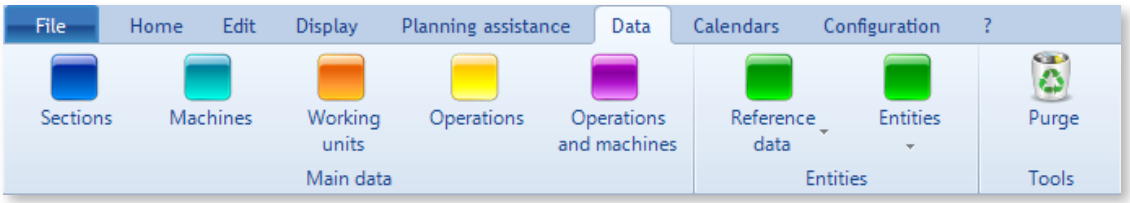



In the middle, the menu itself:




◄ The **File** menu opens a drop-down menu containing the most used commands.

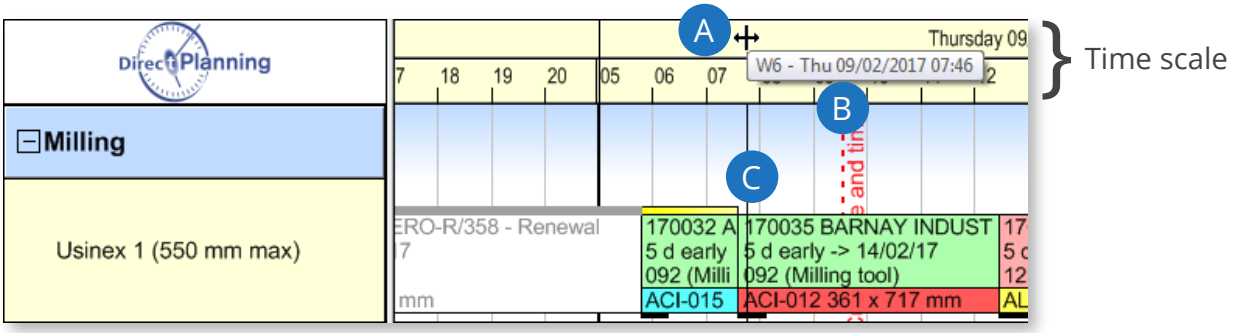
▼ The other menus open their own toolbar, like the **Data** menu below:



# 2.2.2. The time scale

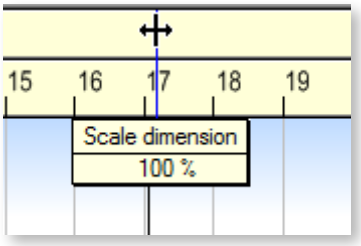
The time scale is used to find your way in the schedule and place your jobs where you want.

Sample time scale (your schedule time scale may look different than the one below, which has an average zoom level). Changing the zoom level changes the colour of the time scale:




| | |
|---|---|
| A | When hovering over the time scale, the pointer looks like this: ✢ |
| B | At the same time, a tooltip displays the week, date and time matching the cursor position in the schedule. |
| C | Moreover, a vertical line across the schedule follows the cursor movements to help you position jobs accurately. |

To benefit from the best balance between amount and readability of information displayed, the time scale can be stretched or contracted.
To do this, left-click and read the tool tip:




It shows the size of the scale, 100 %. This is the size of the scale currently displayed.
Move the cursor to the right (or press the + key of the keypad) to stretch the scale (values greater than 100 %).
Move the cursor to the left (or press the - key of the keypad) to contract the scale (values lower than 100 %).

The objective is to find the **best balance between amount and readability of information displayed**:

The more you stretch, the less information displayed but more readable.
The more you contract, the more information displayed but less readable.

**OUR ADVICE**

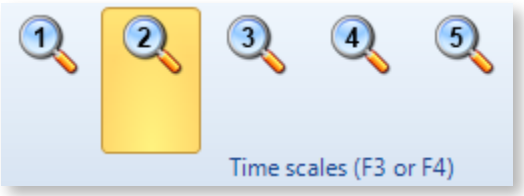
You can hide certain parts of the time scale, such as the weekends. See section 4.3.11., *Creating display modes*,for more information.

**Note**

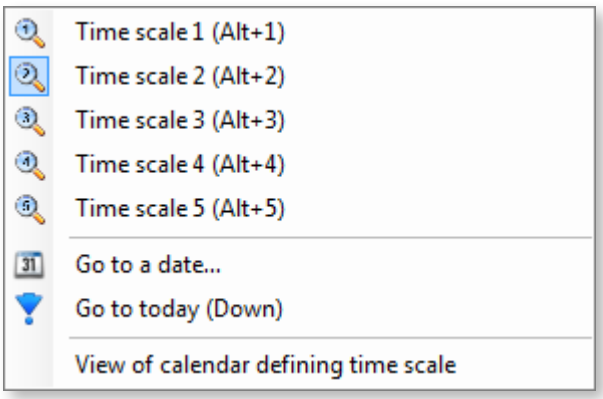
Resizing the time scale is a temporary action: the adjustment is not saved.

Time scale values are defined by the administrators in the display modes. When selecting other display modes, you can have other time scales.
The scaling is purely visual, without any impact on the arrangement of jobs in the schedule.

On the schedule main screen, press F3 and F4 to toggle between the time scales configured by the administrator:



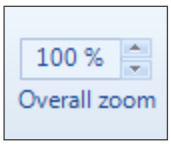

It is also possible to right-click on the time scale to choose between these preconfigured scales:




◄ This context menu also offers the ability to navigate to the date of your choice or return to the current date.

## Planning zoom

You can zoom in and out of the schedule by holding the Ctrl key while using the mouse wheel.
This can also be performed by changing the overall zooming level, to the right of the **Home** toolbar:




Used alone, the mouse wheel makes a vertical scroll in the schedule. It has no effect of the schedule fits the height of the window.
While **holding the Alt key**, the mouse wheel makes a horizontal scroll in the schedule.
While **holding the Ctrl key**, the mouse wheel zooms in and out of the schedule (variation of the“Overall zoom”).

**Note**
The zoom percentage can be forced in the configuration of display modes.

# 2.2.3. The projection

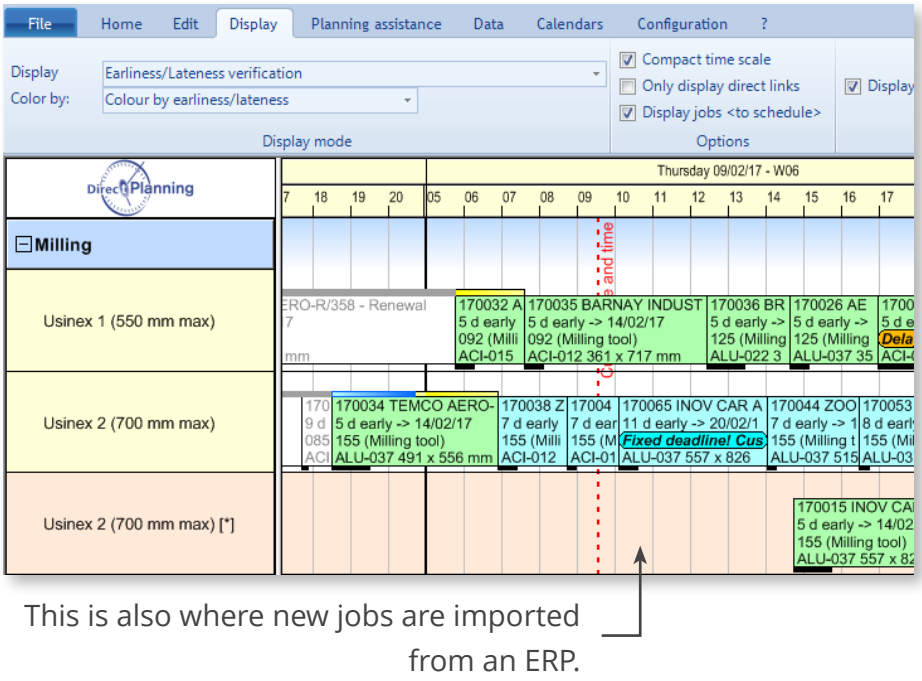
Display modes (defined by the administrator) allow the creation of projections for each and every user.

The projection of a schedule is displayed vertically, on the left side of the Direct Planning window.

- The planning manager will choose a display mode offering a projection with machines grouped by sections, well-suited for machine scheduling.
- The sales rep will prefer a display mode offering a projection with orders grouped by customers: this projection allows him to view the all orders placed by a customer if the latter enquired about the status of his orders.
- Other users will see the schedule differently with display modes implementing different projections.

To select a projection, go to the **Display** menu and open the list of display modes:

The projection by sections and machines is usually the most suitable for the planning manager ►



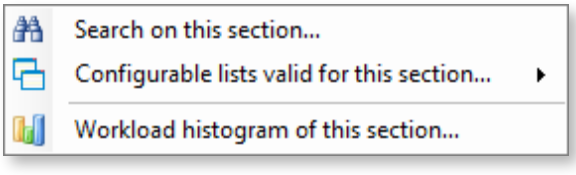

The "Milling" section →

The machines in the "Milling" section →

The jobs "to schedule" for "Milling machine 2". →

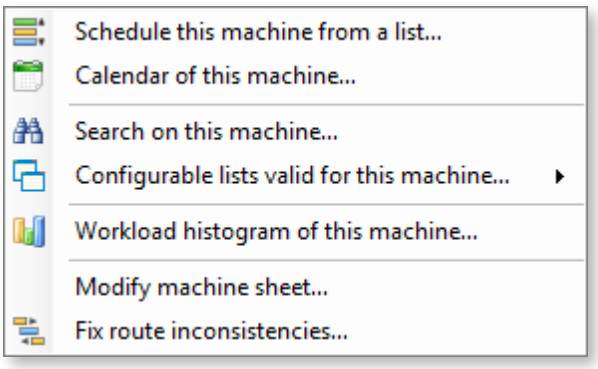
This is also where new jobs are imported from an ERP.

Right-clicking on a section opens the following context menu:




◄ These functions are explained in **section 5**, *Scheduling with Direct Planning*, of this documentation.

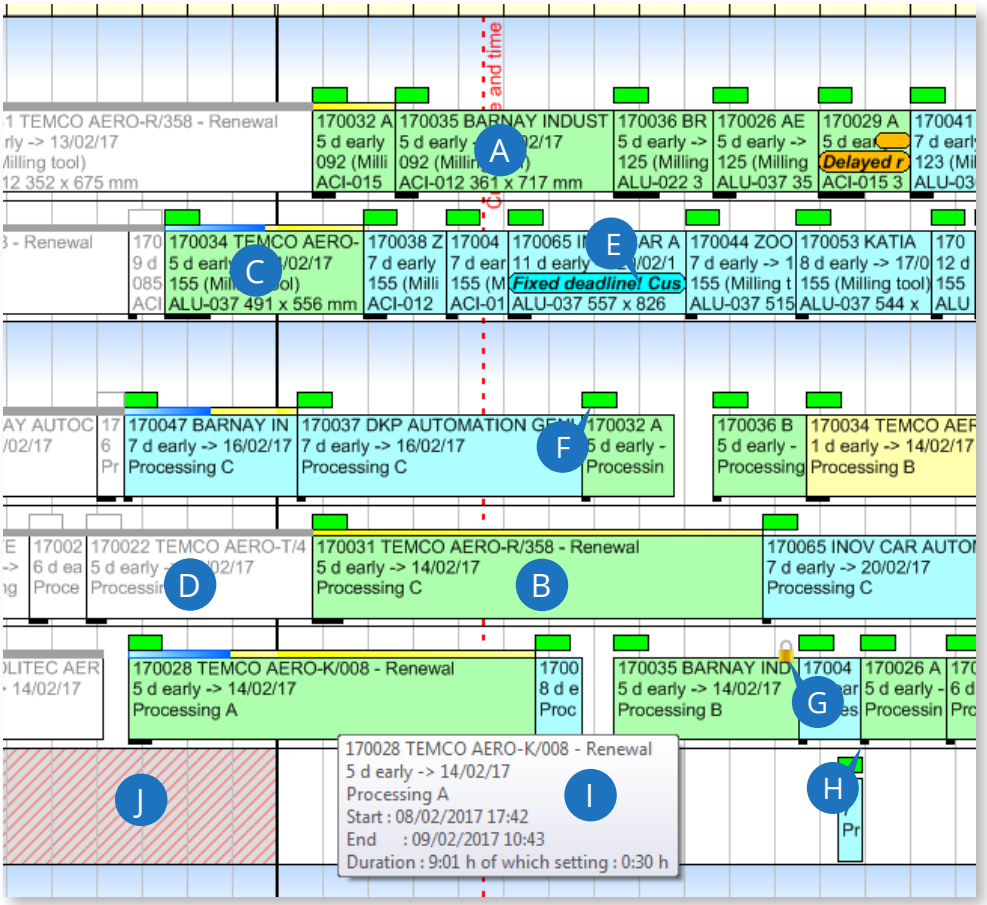
Right-clicking on a machine opens the following context menu:



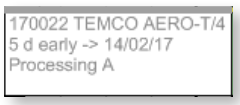
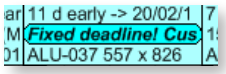
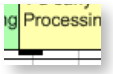
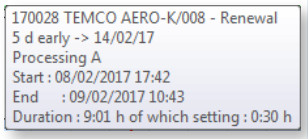

◄ These functions are explained in **section 5**, *Scheduling with Direct Planning*, of this documentation.

# 2.2.4. The schedule

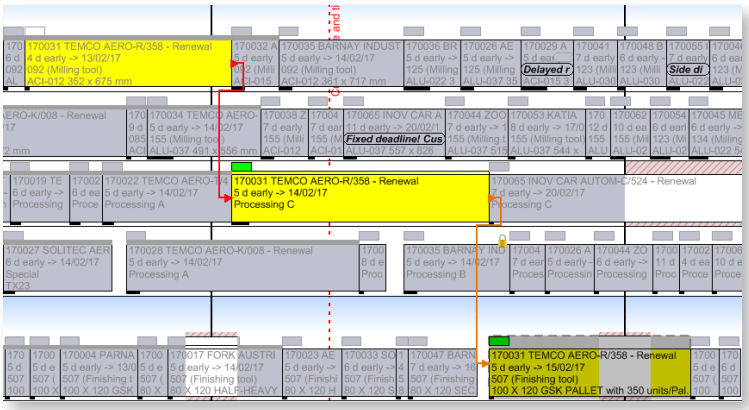
The planning space fills the major part of the screen.
It is the workspace where your jobs are organised.
Each rectangle represents an activity planned on a machine at a given time.
In Direct Planning, we use the generic term “Job”.




| | Illustration | Designation |
|---|---|---|
| A | 170035 BARNAY INDUST<br>5 d early -> 14/02/17<br>092 (Milling tool)<br>ACI-012 361 x 717 mm | Job not started |
| B | 170032 A<br>5 d early<br>092 (Milli<br>ACI-015 | Job started (without progress status): yellow bar above the job. |
| C | 170034 TEMCO AERO-<br>5 d early -> 14/02/17<br>155 (Milling tool)<br>ALU-037 491 x 556 mm | Job started (with progress status): the blue bar shows the progress of the job, when produced quantities are declared in Direct Planning. |

| | Illustration | Designation |
|---|---|---|
| D |  | Job completed: content, progress status and flags greyed out. |
| E |  | Alert message on a job. |
| F | | Flag on a job. |
| G | | The padlock indicates that the job is locked. |
| H |  | Setting duration is identified by a black proportional bar under the job. |
| I |  | Tooltip: pops up when hovering over a job. |
| J | | Idle area. |

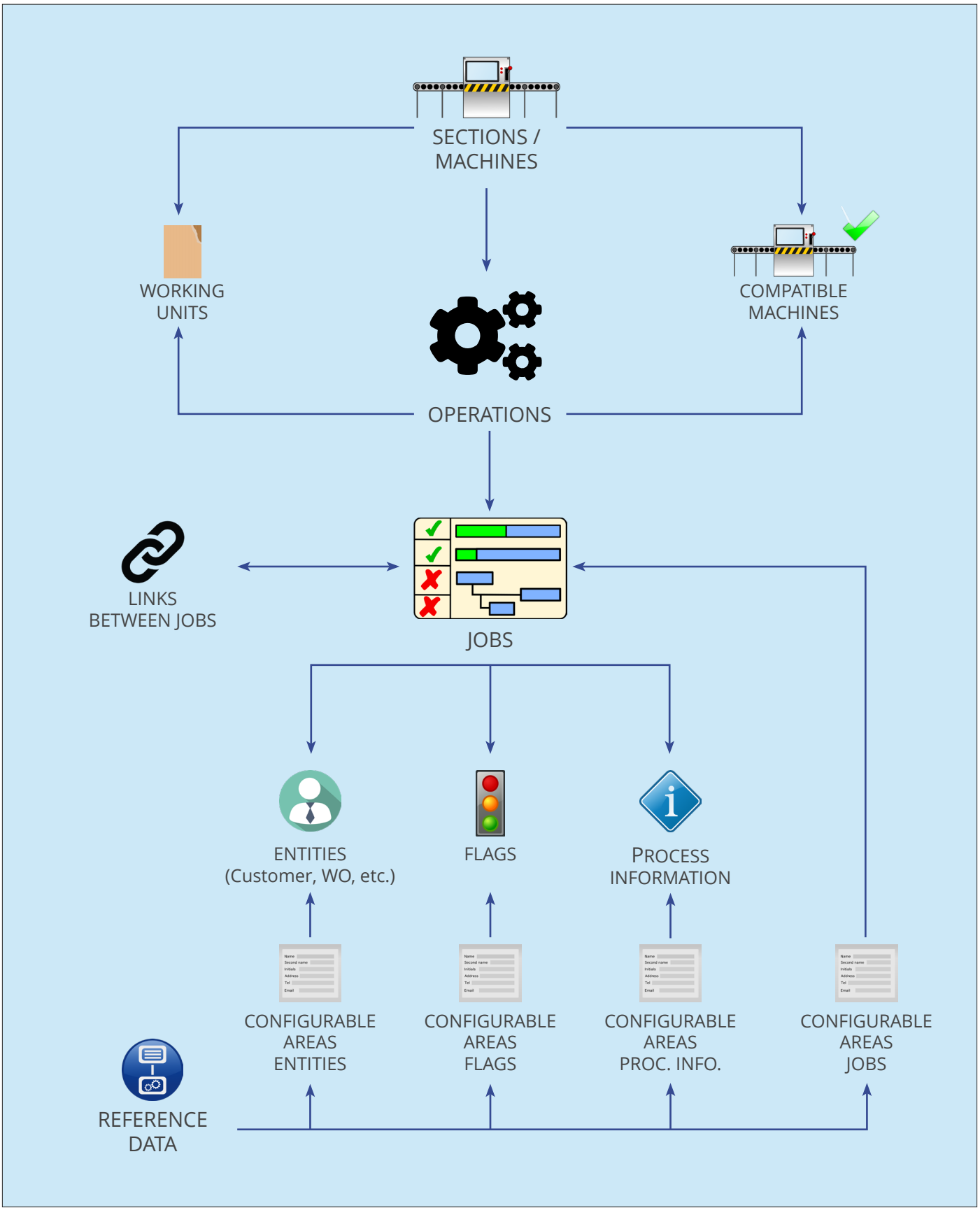
When there are routes, the schedule also shows the links between jobs for the selected jobs (more information about links and routes in **section 5.4**, *Creating routes*):




◄ Route highlighted (the other jobs are greyed out).

# 3. Understanding Direct Planning's core notions

## 3.1. Overall diagram



# 3.2. Key terms

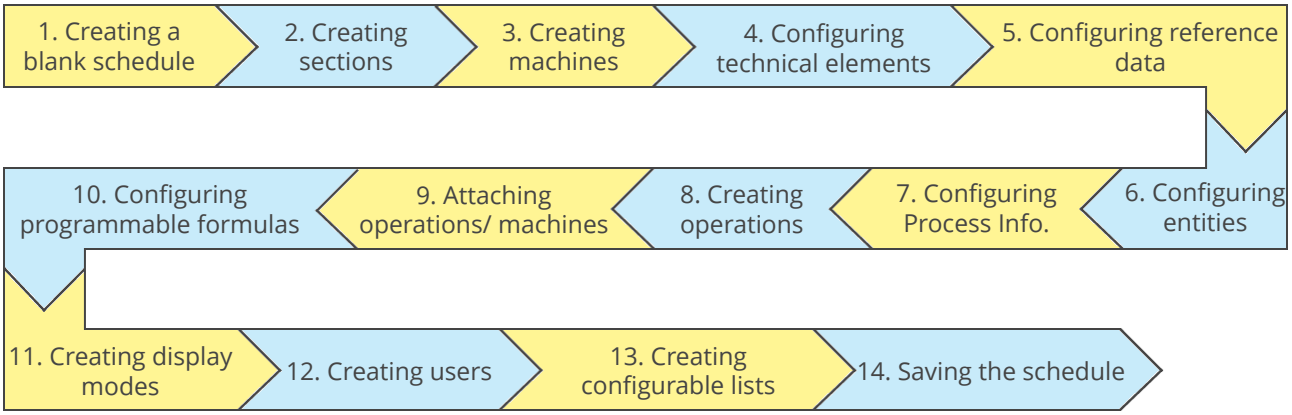
The following table defines the key terms used in the diagram above.
See our *glossary in Annex B* to get a reference list of terms used in Direct Planning

| Term | Definition |
|---|---|
| **Compatible machines** | Based on your business rules and data, Direct Planning can tell whether or not a job can be moved to another machine. Moving a job to an incompatible machine displays a warning. |
| **Configurable areas** | Certain standard data in Direct Planning (machines, jobs, multi-status flags, entities and Process Information) can be complemented by configurable areas which are customisable according to your needs. |
| **Entities** | Entities are data lists which evolve with your activity (Sales representatives, Customers, Orders,...).<br><br>Entities must first be configured according to your needs, allowing to benefit from a list for each data. |
| **Flags** | Flags are coloured and sometimes hatched bullets located above and/or on the right of jobs.<br>They serve the same purpose as paper clips and other stickers put on traditional wall schedules. |
| **Jobs** | A job represents an occupation or activity at a given time, for a given resource. |
| **Links** | The succession of jobs within a route is materialised by links (coloured arrows). |
| **Machines** | Machines are the foundation of the Industry planning. Please note that in Project and Service modes, machines are replaced by resources (e.g. rooms, employees, etc.). |
| **Operations** | Your machines perform operations (e.g. this machine makes die-cutting, that machine makes bonding, etc.). |
| **Process information** | Process Information is technical data whose display is limited to certain machines. |
| **Reference data** | Reference designates data lists represented by a code, a designation and a colour. (e.g. lists of sales representatives, product families, cutting dies, colours, etc.). |
| **Sections** | Sections are groups of machines. |
| **Working units** | Working units express the unit of measure for your machines.<br><br>Examples: panels, sheets, kilograms, copies, linear feet. |

# 4. Creating a schedule

## 4.1. Key steps

Our creation guide is based on the Industry schedule, as it is the most comprehensive mode. Click on each step to access the corresponding section.




### 4.1.1. Creating a blank schedule

To create a new schedule, you must connect to the machine which will host it. Any newly created schedule will be saved in a local database on the machine running Direct Planning.

Then, other stations can remotely access or modify this schedule.

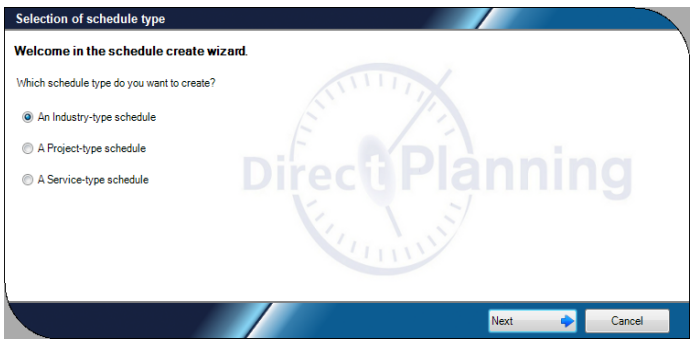
**ADMINISTRATION**

Follow the steps below to create a blank schedule:

1. Launch Direct Planning and click on **File** > **New** to open the schedule creation wizard.

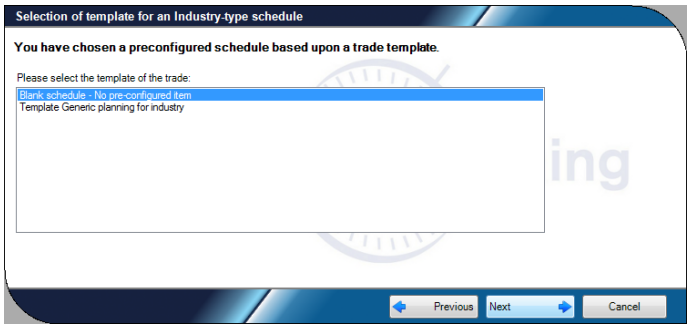
   Select your planning type.

   Click on **Next**.



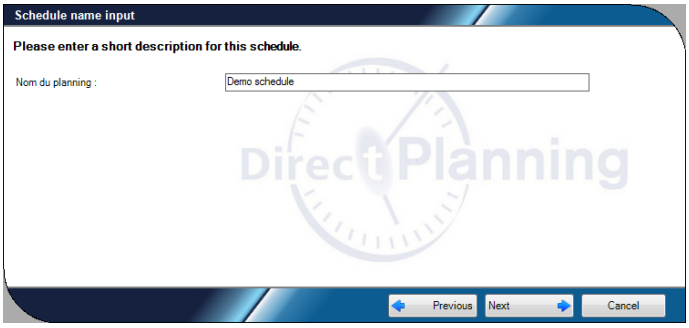
2. Choose your template in the list of preconfigured schedules.

   Since you are creating a schedule from scratch, select **Blank schedule - No pre-configured item**.
   Click on **Next**.




3. Name your new schedule.

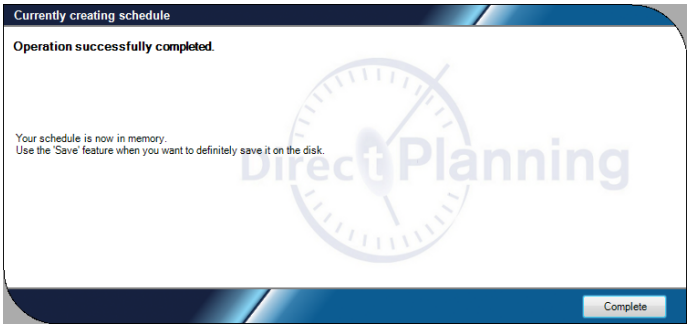
   Give it a self-explanatory name.
   Users will see this name when opening the schedule.
   Click on **Next**.



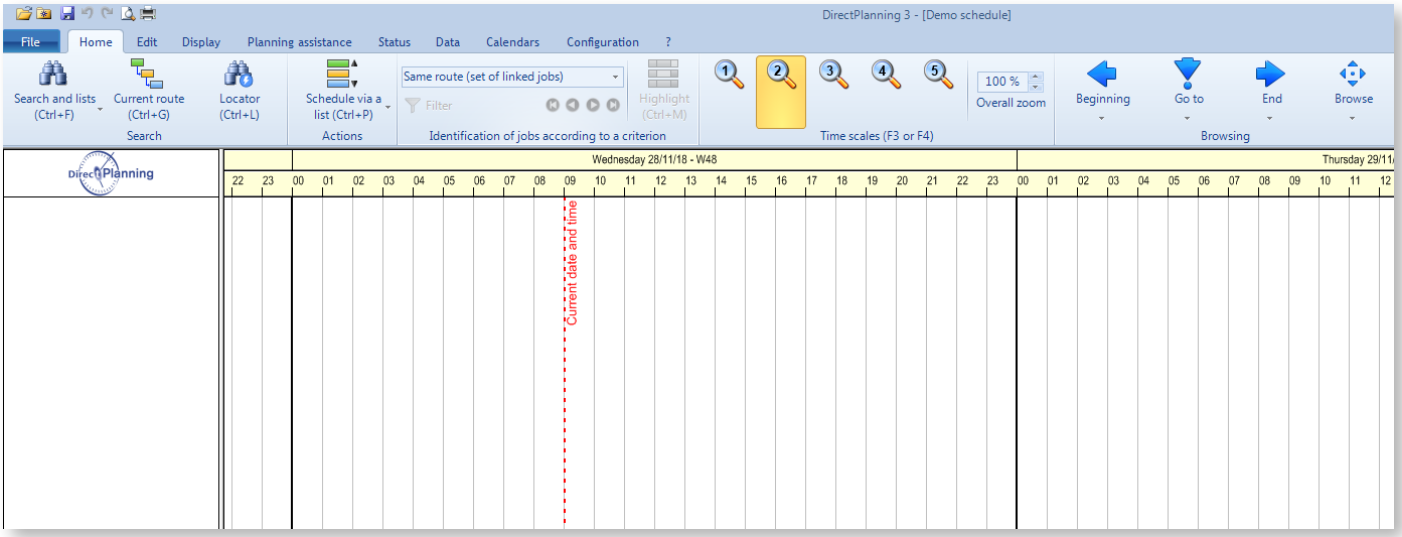

4. Your planning is ready for use.

   It is loaded in memory but not yet saved on your machine.

   After clicking on **Finish**, save it on your machine



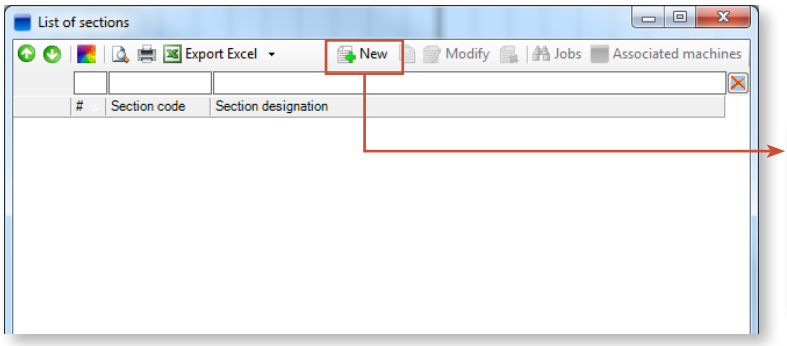

When you click on **Finish**, the new schedule opens:



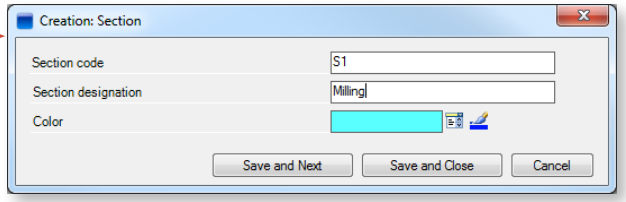

We are now going to configure this schedule.

# 4.1.2. Creating sections

Before creating machines, we are first going to create sections to group them. Click on **Data** > **Sections**:




Click on **New** to open the section creation window:

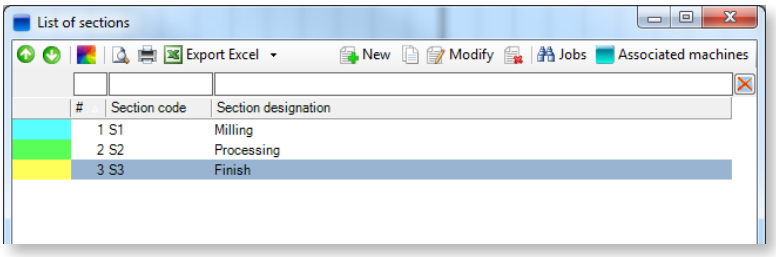



Enter a code and a designation for your new section, and give it a colour:

Default colour

Selection in the picker pallet

Click on **Save and Next** to create other sections or **Save and Close** to return to the list of sections. In our example, we created 3 sections: Printing, Die-cutting and Gluing:




◄ In addition to being able to print, export and add/modify/delete sections, you can:

Change the associated colours

Jobs

Search for jobs related to all machines of this section

Associated machines

Display the list of machines for this section

# 4.1.3. Creating machines

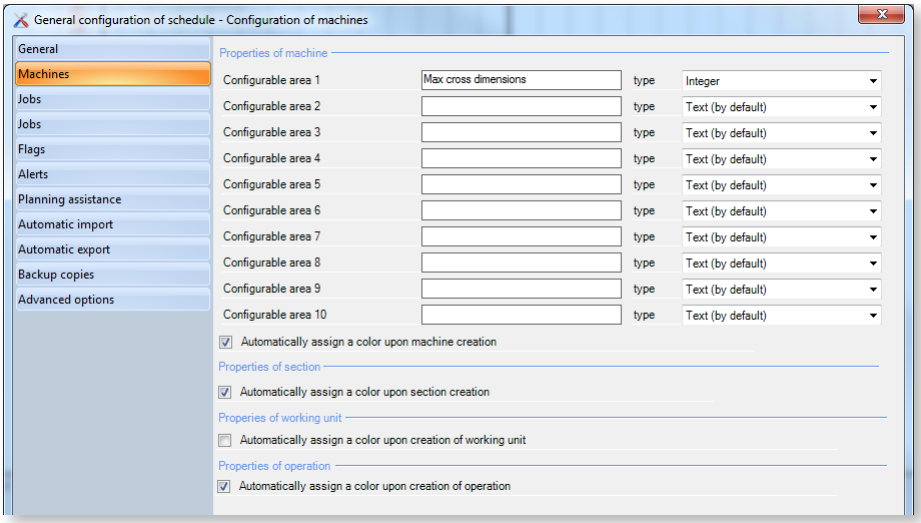
**OUR ADVICE**

When you create machines, start by defining configurable areas. Use these to customise the information related to your machines.

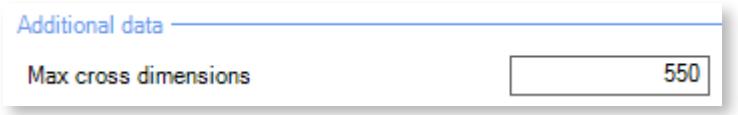
**ADMINISTRATION**

To enter configurable areas for your machines, click on **Configuration** > **General configuration**:

The **Machines** menu offers the possibility to set a maximum of 10 configurable areas, which will be available when creating machines:

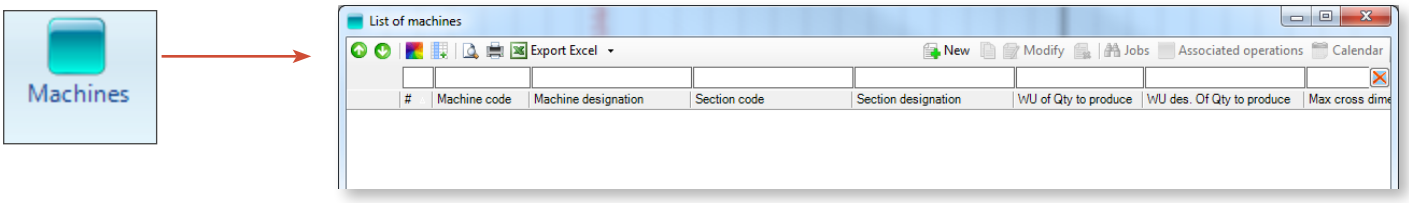



In the example above, we set the first configurable area by giving it a designation (**Max cross dimensions** and selecting a type (**Integer**) in the drop-down menu. Consequently, when adding a machine (**Data** > **Machines** tab), we will be able to enter the **Max cross dimensions** as additional data:




From this screen, you can also enable the automatic attribution of colours when creating machines/sections/working units/operations.

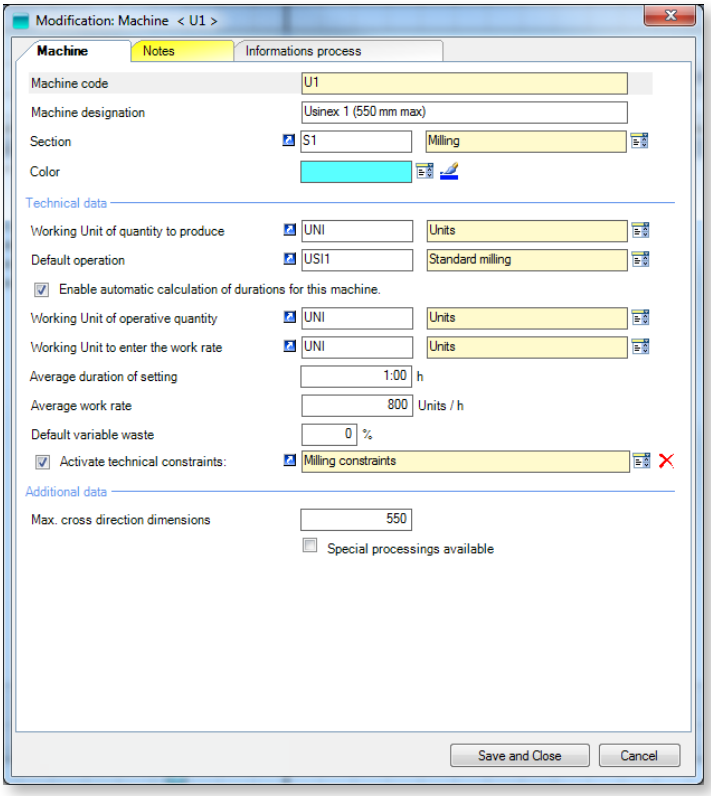
To continue and create your machines, click on **Data** > **Machines**:




Note that the **Max cross dimensions** previously configured as **Configurable area 1** is displayed as a column in the list of machines. When you have created your machines, you will then be able to sort them by ascending (or descending) Max cross dimensions accepted.

You can choose the columns to display in this window by right-clicking on the header of any column.

Click on **New** to create a new machine.



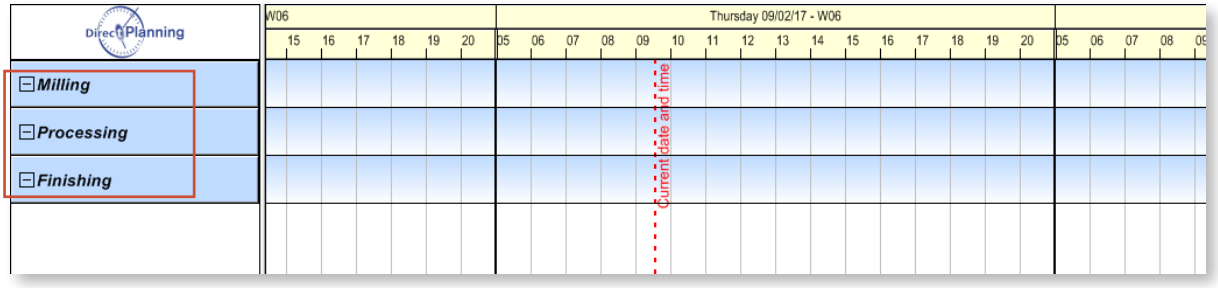

◀ The machine creation/modification window consists of 3 parts:

- Enter the machine identification information (code and designation) in the upper part and pair the machine with a section and a colour.
- Under the **Technical data** area, enter the working unit of quantity to produce (e.g. sheets, boxes or cases), as well as the default operation (where appropriate). When Direct Planning calculates durations, it is also required to enter the working unit of operative quantity (quantity processed by the machine) as well as the working unit in which the work rate, the average setting time, the average work rate and the average variable waste will be expressed.
- Data contained in the **Additional data** area depend on the configurable areas set.

## Our advice

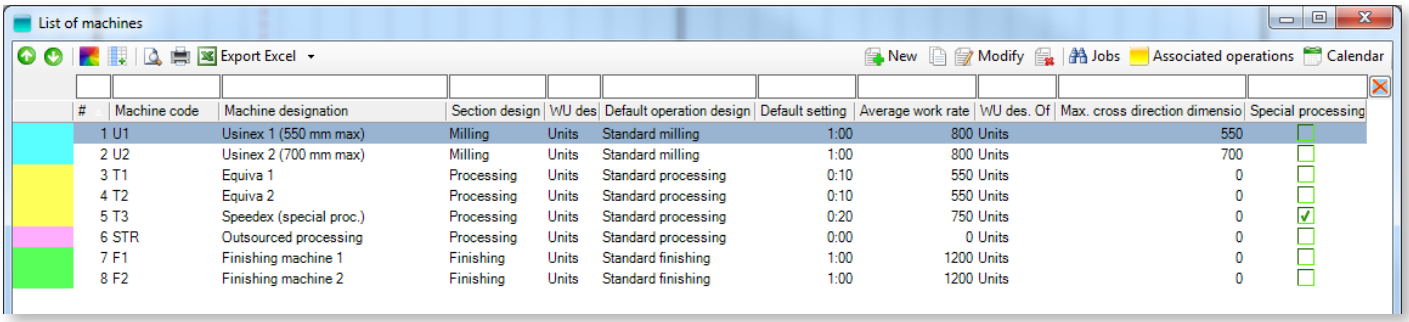
We strongly advise you to chack the box **Enable automatic calculation of durations for this machine** to have Direct Planning calculate durations. Note that this function is entirely compatible with the import of data from an ERP.

When you are done creating sections, click on **Close**. Your newly created sections now appear on the left of the Gantt:



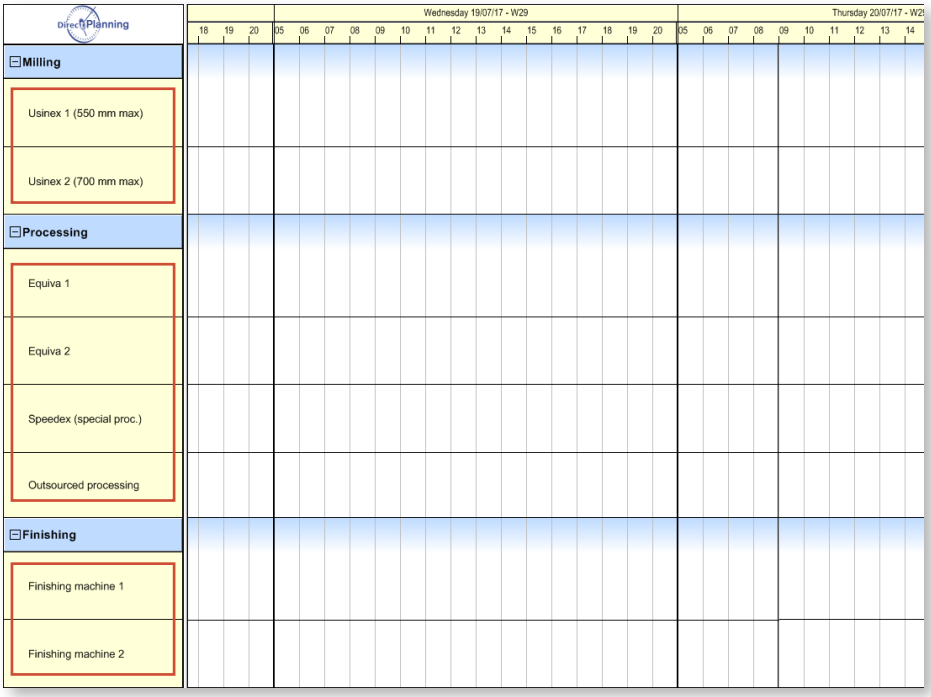

These sections are still empty. We are now going to allocate machines to them.

This way, we created 8 machines (distributed in 3 sections):




| # | Machine code | Machine designation | Section design | W/U des | Default operation design | Default setting | Average work rate | W/U des. Of | Max. cross direction dimensio | Special processing |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | U1 | Usinex 1 (550 mm max) | Milling | Units | Standard milling | 1:00 | 800 Units | | 550 | |
| 2 | U2 | Usinex 2 (700 mm max) | Milling | Units | Standard milling | 1:00 | 800 Units | | 700 | |
| 3 | T1 | Equiva 1 | Processing | Units | Standard processing | 0:10 | 550 Units | | 0 | |
| 4 | T2 | Equiva 2 | Processing | Units | Standard processing | 0:10 | 550 Units | | 0 | |
| 5 | T3 | Speedex (special proc.) | Processing | Units | Standard processing | 0:20 | 750 Units | | 0 | ☑ |
| 6 | STR | Outsourced processing | Processing | Units | Standard processing | 0:00 | 0 Units | | 0 | |
| 7 | F1 | Finishing machine 1 | Finishing | Units | Standard finishing | 1:00 | 1200 Units | | 0 | |
| 8 | F2 | Finishing machine 2 | Finishing | Units | Standard finishing | 1:00 | 1200 Units | | 0 | |

Upon validation, they also appear on the left side of the Gantt:




## Our advice

When creating machines (or other data such as operations, entities, etc...) sharing common characteristics, save time by creating new machines from existing ones: Right-click on the machine to duplicate in the list of machines and select **Duplicate...**

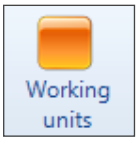
## Considerations on working units

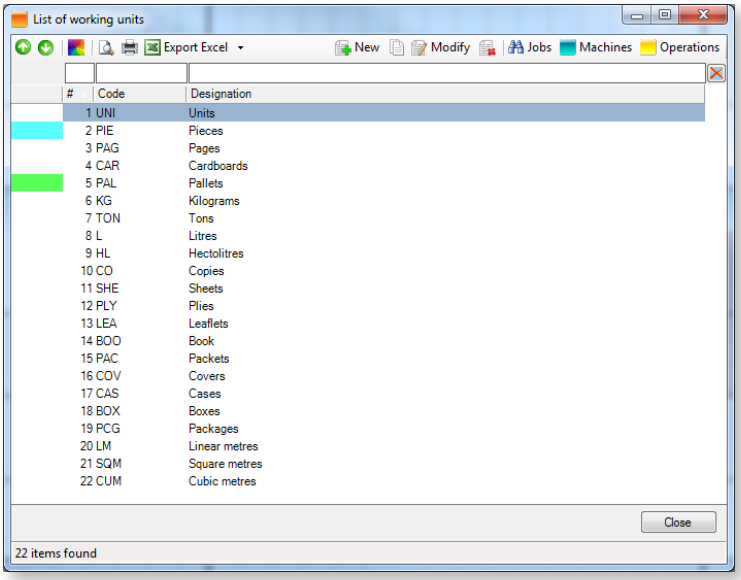
Why indicate the working unit of quantity to produce when entering machines?

1. This creates a first level of compatibility. In the schedule, moving a job towards a machine with a different working unit of quantity to produce displays a warning. We will see that operations offer a second level of compatibility.

2. This can be leveraged to specify the average setting time and the average work rate, already discussed.

Direct Planning includes a list of standard working units which can be displayed/modified using the **Data** > **Working units** menu:




◀ This screen allows the creation/modification/deletion of working units.

After selecting a working unit, you can also click on **Jobs**, **Machines** and **Opérations** to display the associated elements.

# 4.1.4. Configuring technical elements

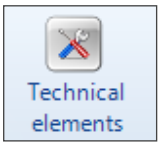
**Our advice**

The configuration of technical items below is provided for reference only. Version 3.1 introduced **reference data** which bring more flexibility. Therefore, we advise you to favour them over technical elements.

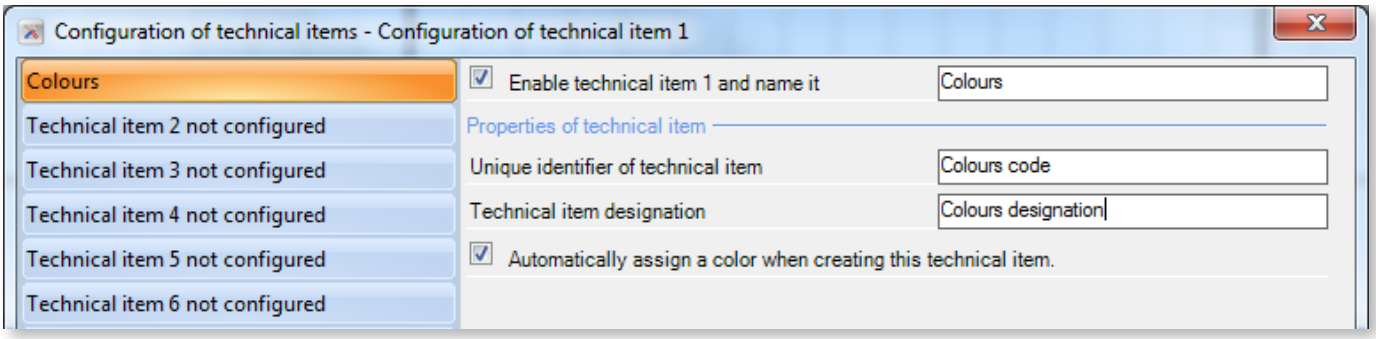
Technical elements are characteristics of your machines. In the corrugated cardboard sector, it can be the number of colours, the type of corrugation or the type of bonding. These characteristics are used to determine the setting time and the work rate.

**Administration**

The configuration of technical elements is performed by clicking on **Configuration** > **Technical elements** in the ribbon:

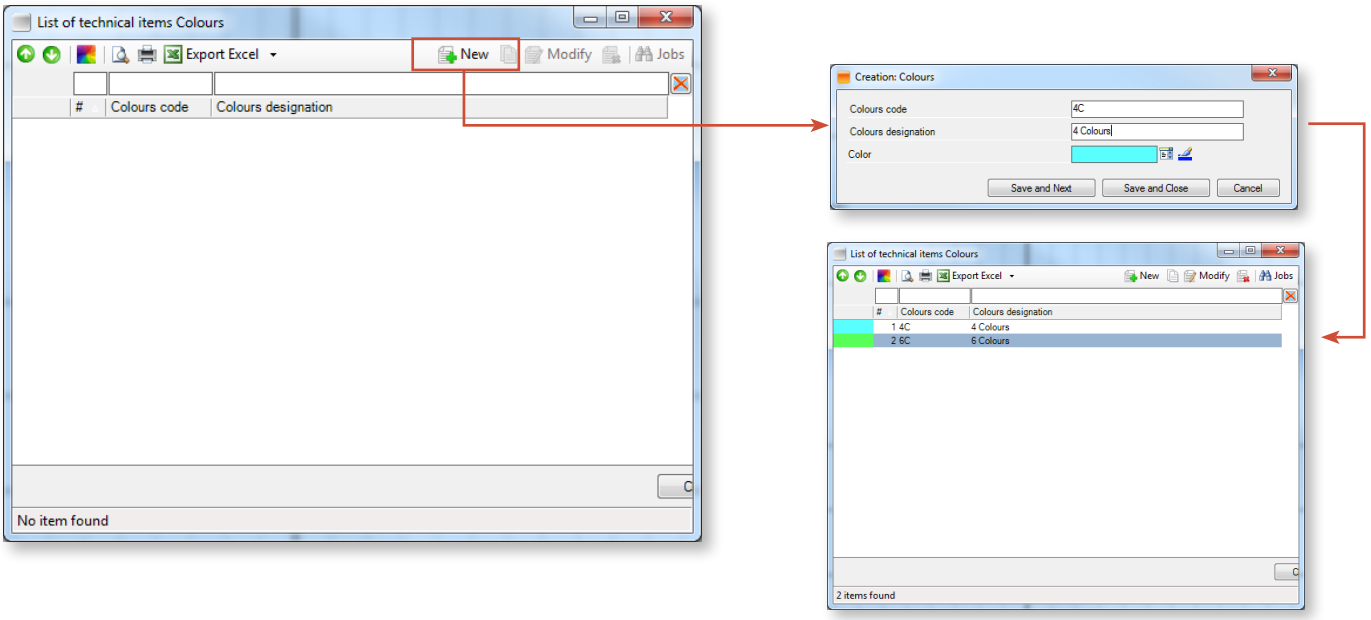



Below, we created the **Colours** technical element, to which a code and a designation were assigned automatically (while remaining editable manually):



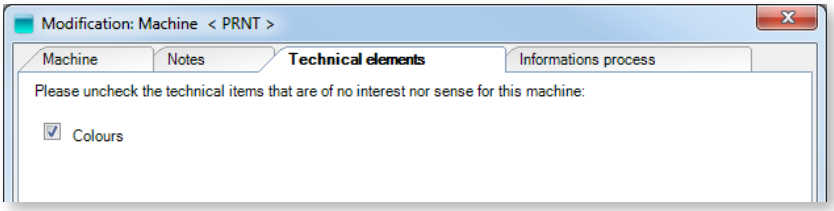

The configured technical elements are displayed under the **Data** tab:

Click on the **Colours** technical element to add elements:

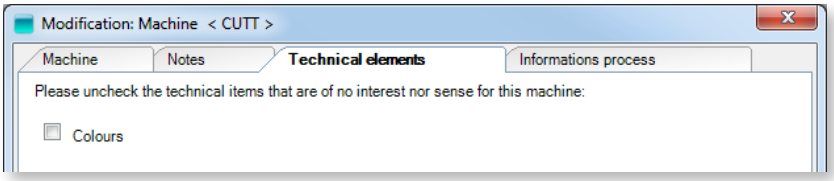



Technical elements will then be selected when creating jobs.

Because some technical elements may not apply to certain machines, you can deselect those that are not relevant when creating individual machines. In the example, the number of colours applies to printing machines but not to die-cutting machines:




▲ PRNT machine with technical element **Colours** active




▲ CUTT machine with technical element **Colours** inactive

# 4.1.5. Configuring reference data

Reference data designates data lists represented by a code, a designation and a colour. These can list sales reps, product families, cutting-dies, colours, etc.

Reference data is used to set a type for the many fields that Direct Planning enables to customise (in addition to the traditional types: integer, text, date, etc.).

Reference data then impacts multiple levels:

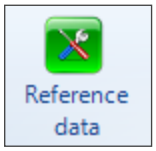
1. **Inform**: Windows can be configured to display this data.

2. **Colour**: jobs can be coloured according to specific reference data. For instance, colours can discriminate cutting-dies.

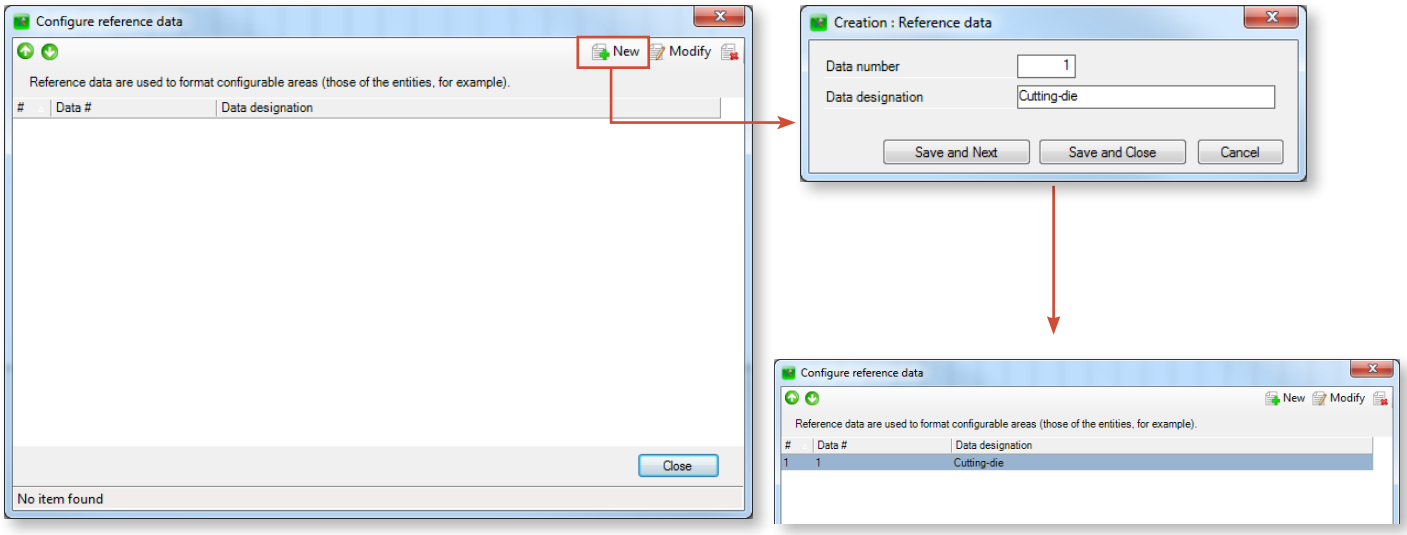
3. Affect **programmable formulas** defining setting times and work rates.

## ADMINISTRATION

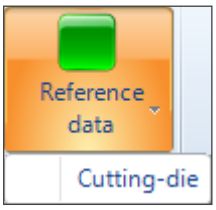
The configuration of reference data is performed by clicking on **Configuration** > **Reference data**:



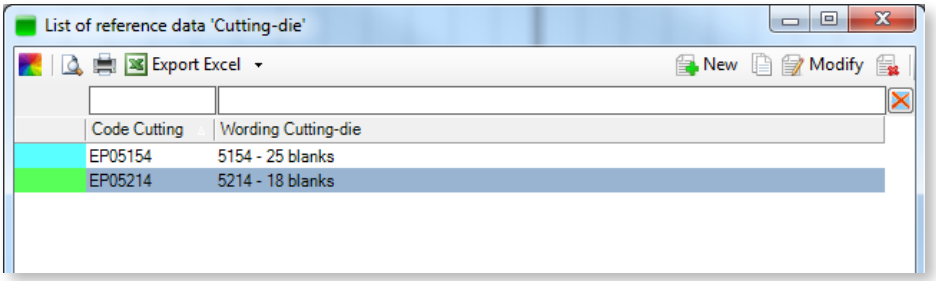

We are going to create **Cutting-die** reference data:



User can access the reference data configured above under the **Data** > **Reference data** tab of the ribbon:

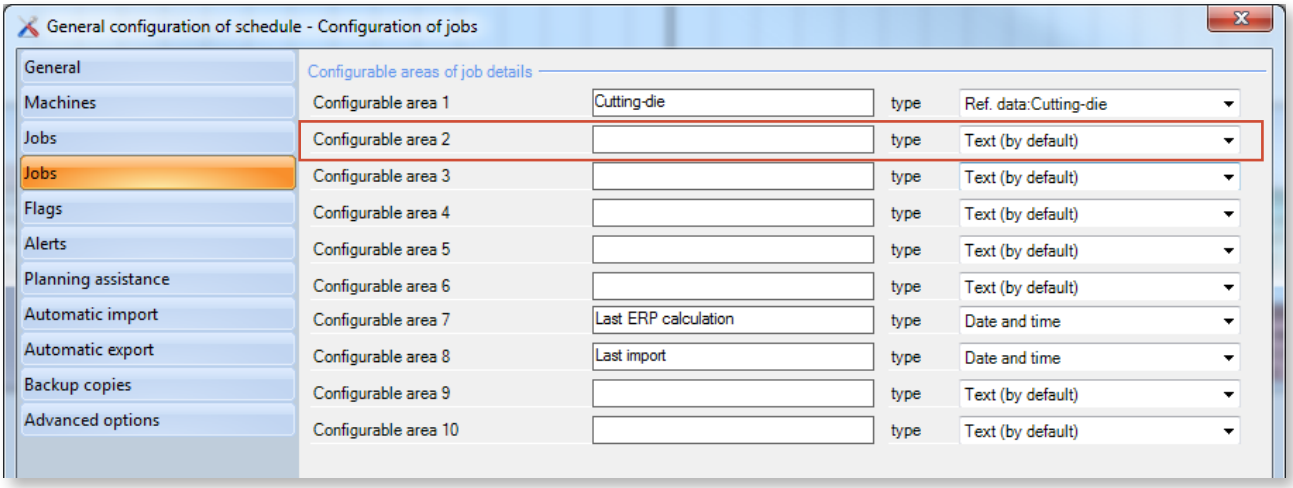



Creation of cutting-dies via the **Data** > **Reference data** > **Cutting-die** menu:

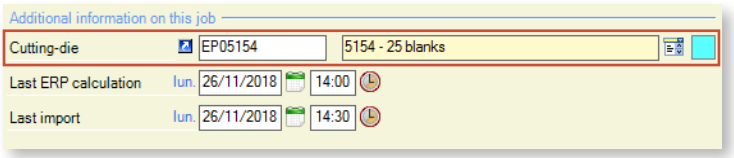



## ADMINISTRATION

Data type **Cutting-die** is now available in the configurable areas. This allows to enrich job information with the related configurable area (**Configurable area 1**):




Reference data **Cutting-die** now appears in the job additional information (together with the other configurable areas entered on the previous screen):

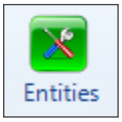


# 4.1.6. Configuring entities

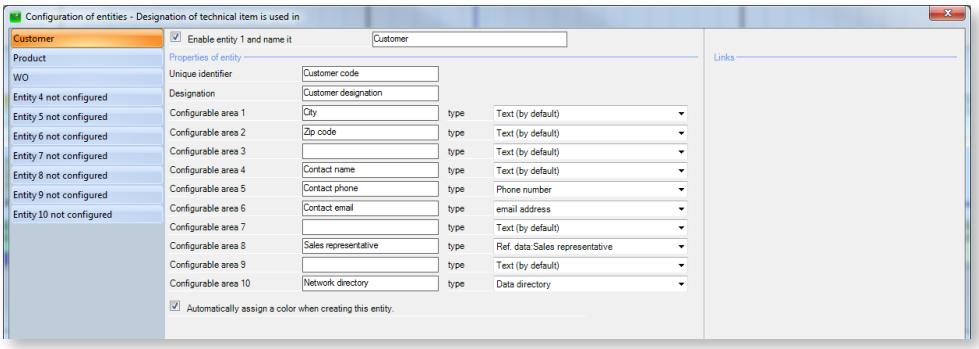
Entities are data lists which evolve with your activity (Customers, Orders, Products, Projects, ...).
Configuring entities provides lists for each individual data.
Entities can be automatically imported from an ERP (unlike other technical data whose list is supposed to be finite and which don't evolve much over time).

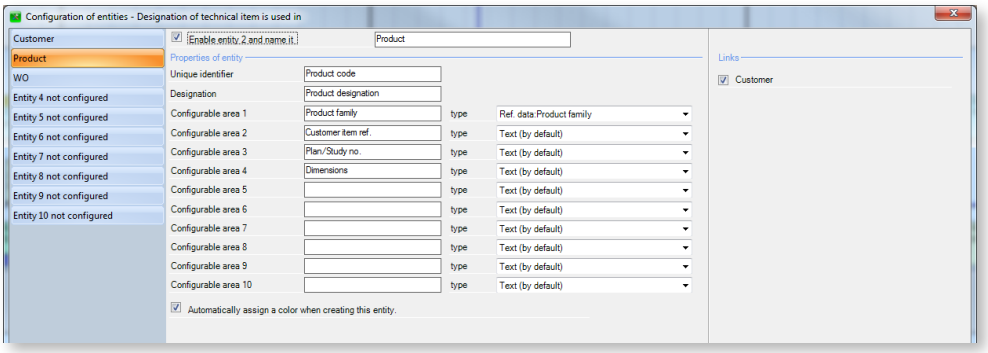
## ADMINISTRATION

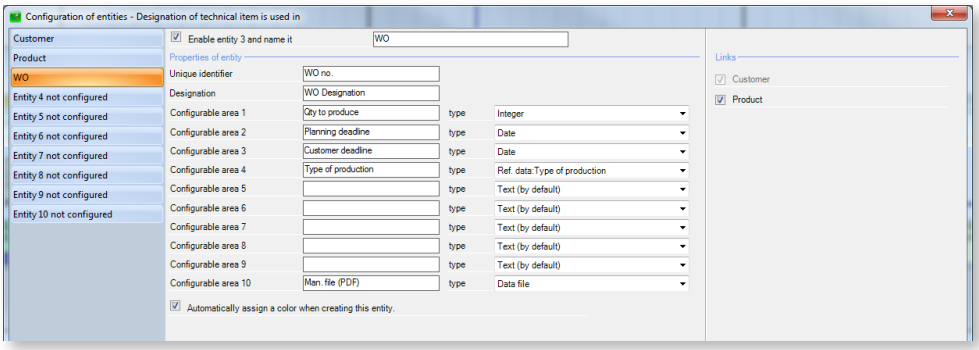
The configuration of entities is performed via the **Configuration** > **Entities** menu:




We are going to configure the following entities: **Customer**, **Product** and **WO**. Each entity features specific data:



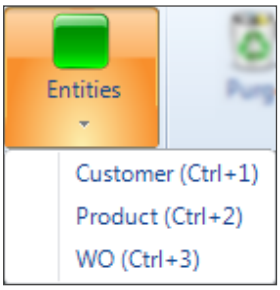



On the right, links display automatically the higher tier entity. For example, in the job details, entering the WO automatically populates the associated product and customer, without any retyping.

## Our advice

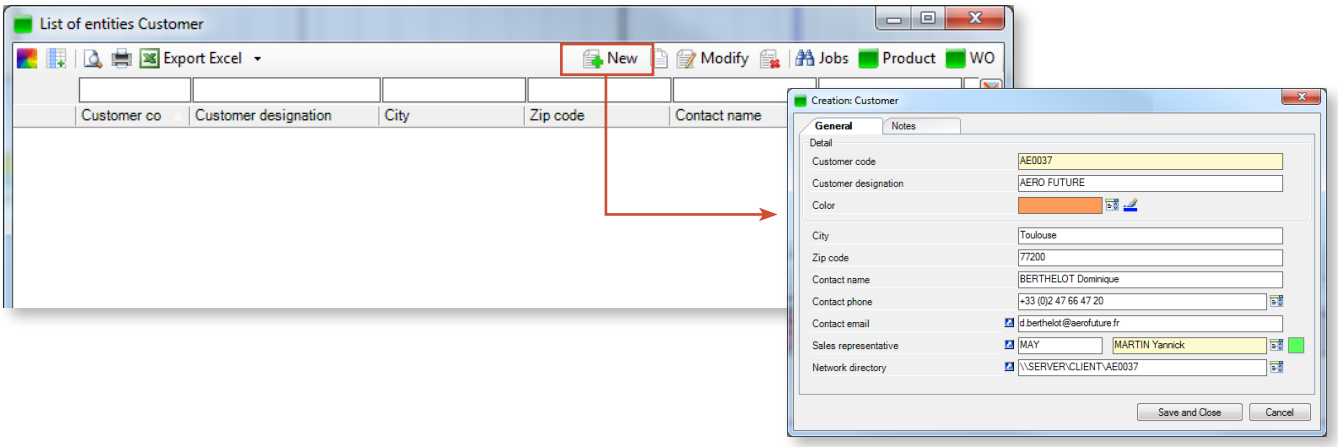
Links are hierarchical. You can see that WOs are linked with products, themselves linked with customers. Accordingly, it is better to enter entities by hierarchical order: Customer, Product and finally WO. However, make sure to unselect the link with the customer when dealing with generic products.

Entities are available under the **Data** > **Entities** tab:

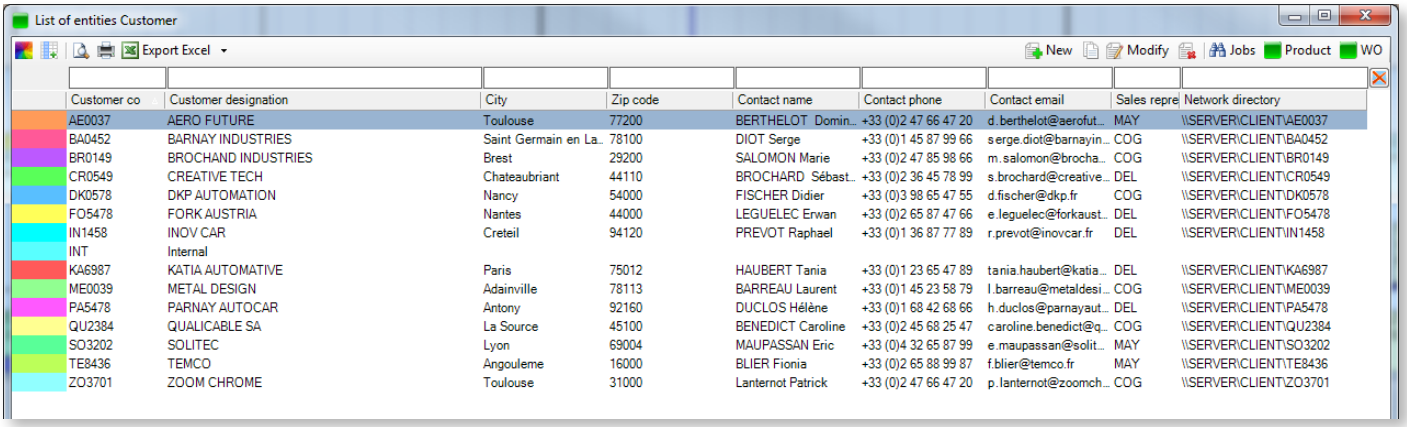



◄ Click on the entity to inform.

▼ The available fields are those previously configured.

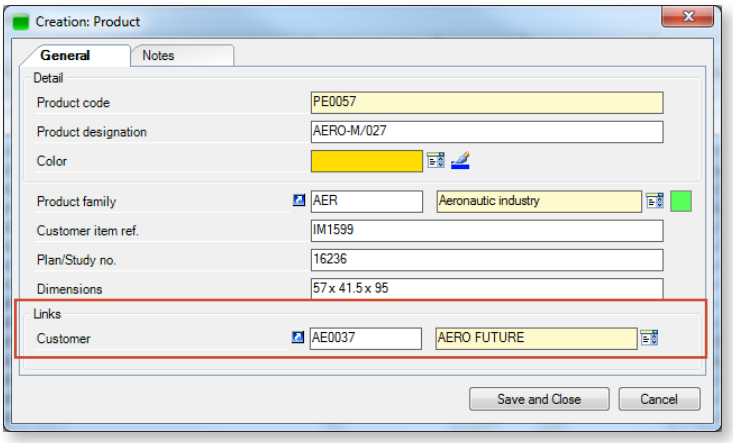



This process is repeated for each **Customer** entity:

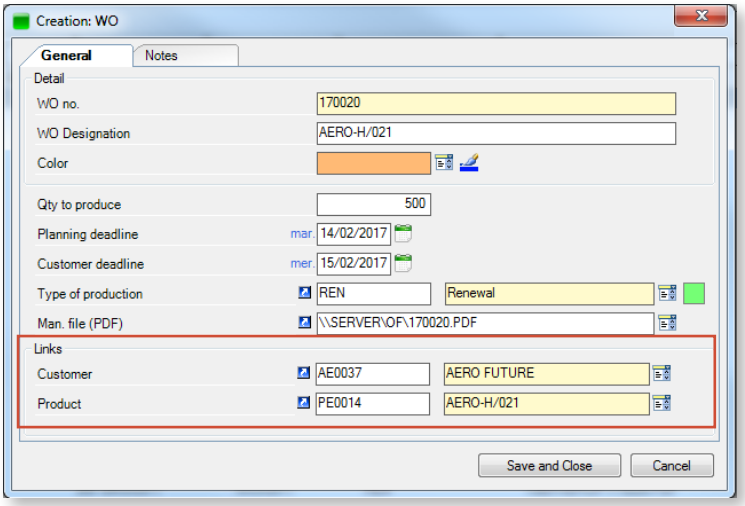



| Customer co | Customer designation | City | Zip code | Contact name | Contact phone | Contact email | Sales repre | Network directory |
|---|---|---|---|---|---|---|---|---|
| AE0037 | AERO FUTURE | Toulouse | 77200 | BERTHELOT Domin... | +33 (0)2 47 66 47 20 | d.berthelot@aerofut... | MAY | \\SERVER\CLIENT\AE0037 |
| BA0452 | BARNAY INDUSTRIES | Saint Germain en La.. | 78100 | DIOT Serge | +33 (0)1 45 87 99 66 | serge.diot@barnayin... | COG | \\SERVER\CLIENT\BA0452 |
| BR0149 | BROCHAND INDUSTRIES | Brest | 29200 | SALOMON Marie | +33 (0)2 47 85 98 66 | m.salomon@brocha... | COG | \\SERVER\CLIENT\BR0149 |
| CR0549 | CREATIVE TECH | Chateaubriant | 44110 | BROCHARD Sébast... | +33 (0)2 36 45 78 99 | s.brochard@creative... | DEL | \\SERVER\CLIENT\CR0549 |
| DK0578 | DKP AUTOMATION | Nancy | 54000 | FISCHER Didier | +33 (0)3 98 65 47 55 | d.fischer@dkp.fr | COG | \\SERVER\CLIENT\DK0578 |
| FO5478 | FORK AUSTRIA | Nantes | 44000 | LEGUELEC Erwan | +33 (0)2 65 87 47 66 | e.leguelec@forkaust... | DEL | \\SERVER\CLIENT\FO5478 |
| IN1458 | INOV CAR | Creteil | 94120 | PREVOT Raphael | +33 (0)1 36 87 77 89 | r.prevot@inovcar.fr | DEL | \\SERVER\CLIENT\IN1458 |
| INT | Internal | | | | | | | |
| KA6987 | KATIA AUTOMATIVE | Paris | 75012 | HAUBERT Tania | +33 (0)1 23 65 47 89 | tania.haubert@katia... | DEL | \\SERVER\CLIENT\KA6987 |
| ME0039 | METAL DESIGN | Adainville | 78113 | BARREAU Laurent | +33 (0)1 45 23 58 79 | l.barreau@metaldesi... | COG | \\SERVER\CLIENT\ME0039 |
| PA5478 | PARNAY AUTOCAR | Antony | 92160 | DUCLOS Hélène | +33 (0)1 68 42 68 66 | h.duclos@parnayaut... | DEL | \\SERVER\CLIENT\PA5478 |
| QU2384 | QUALICABLE SA | La Source | 45100 | BENEDICT Caroline | +33 (0)2 45 68 25 47 | caroline.benedict@q... | COG | \\SERVER\CLIENT\QU2384 |
| SO3202 | SOLITEC | Lyon | 69004 | MAUPASSAN Eric | +33 (0)4 32 65 87 99 | e.maupassan@solit... | MAY | \\SERVER\CLIENT\SO3202 |
| TE8436 | TEMCO | Angouleme | 16000 | BLIER Fionia | +33 (0)2 65 88 99 87 | f.blier@temco.fr | MAY | \\SERVER\CLIENT\TE8436 |
| ZO3701 | ZOOM CHROME | Toulouse | 31000 | Lanternot Patrick | +33 (0)2 47 66 47 20 | p.lanternot@zoomch... | COG | \\SERVER\CLIENT\ZO3701 |

When creating the next entities (Products), these can be linked with Customers:




Finally, entering a WO offers the possibility to select the related product, which automatically populates the **Customer** field:

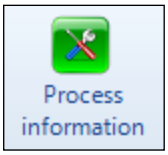


# 4.1.7. Configuring Process Information

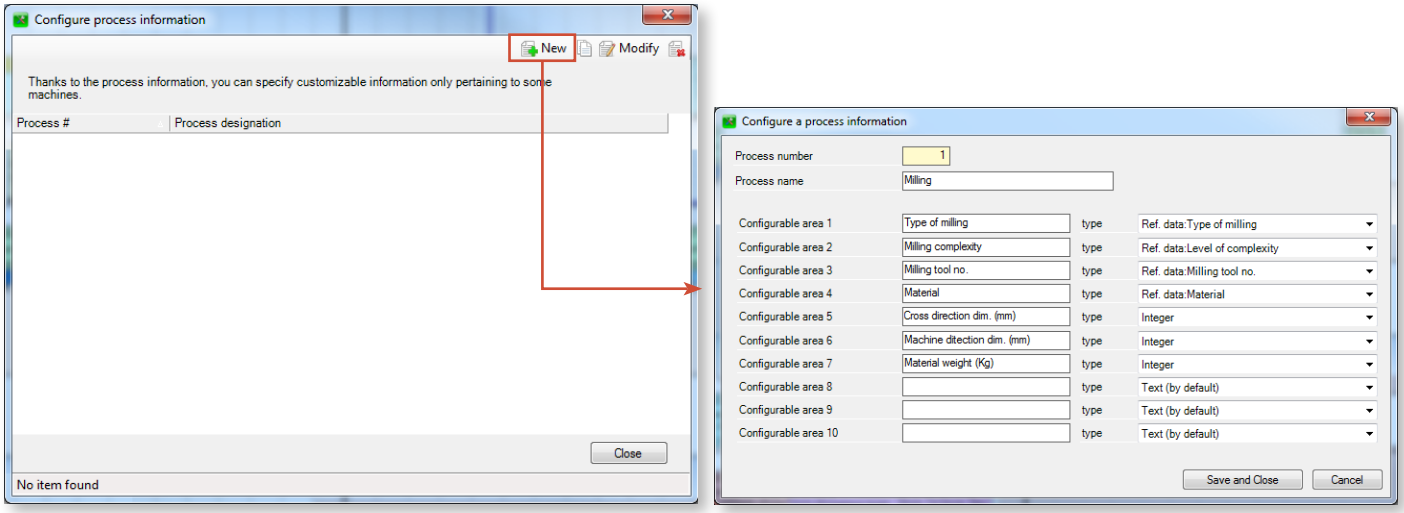
Process Information designates a data structure which extends the customisation features offered in Direct Planning. It refers to technical data which need to appear on specific machines only. The detailed technical information provided is therefore limited to the machines where it is relevant.

## ADMINISTRATION

The configuration of Process Information is performed under the **Configuration** > **Process Information** tab:

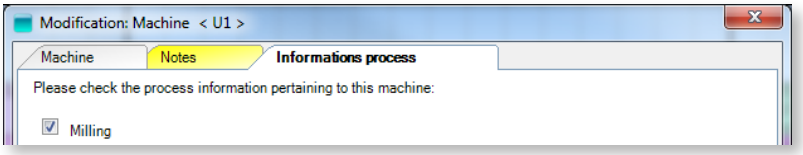



We are now going to configure Process Information related to milling:




In the example above, Process Information build upon standard configurable areas (integer, check box) as well as upon a custom type originating from reference data (Type of milling).

This Process Information can now be applied to milling machines. In the list of machines (**Data** > **Machines** menu), select each affected machine and click on **Modify**. The new **Process Information** tab allows to select the newly created Process Information:




▲ **Milling** Process Information now applies to machine U1.

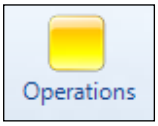
Each Process Information can include a maximum of 10 individual technical information. If this is not enough, multiple Process Informations can be created for a single machine. The purpose is to provide the planning manager with useful information to inform planning decisions.

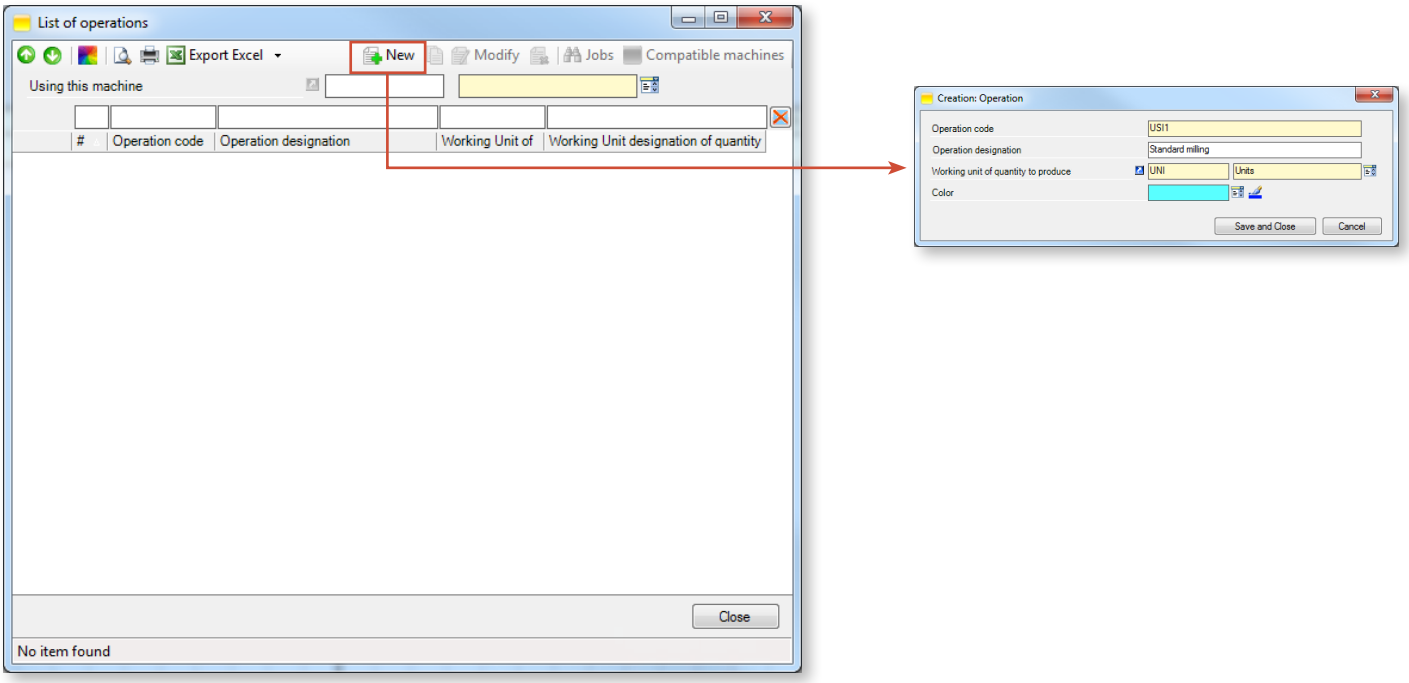
# 4.1.8. Creating operations

The creation of operations must answer the following question:

What are the operations supported by our machines?

The creation of operations is performed via the **Data** > **Operations** menu:




Defining operations requires to specify a code, a designation and the working unit of quantity to produce. The colour is also important, for instance to colour jobs sharing the same working unit in the schedule.

In the example above, the **Standard milling** operation uses the **Units** working unit.

As discussed in the next section, defining operations will allow the association of operations and machines.

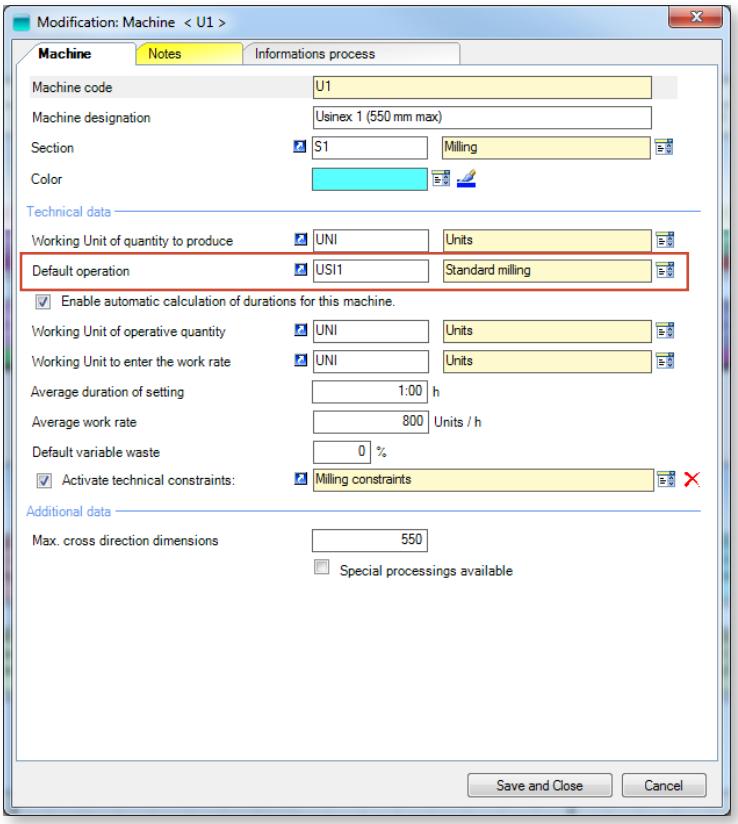
# 4.1.9. Attaching operations to machines

Why attach an operation to a machine?

There are 2 good reasons to do it:

1. After the definition of working units, this creates a second level of compatibility. In the schedule, moving a job towards a machine which is incompatible with the operation displays a warning.

2. This can be leveraged to force the average setting time and the average work rate.



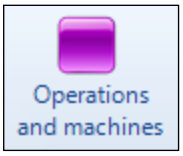

◄ In our example, the working unit **Units** was attached during the creation of the **U1** machine. The working unit **Units** was also attached during the creation of the **Standard milling** operation.

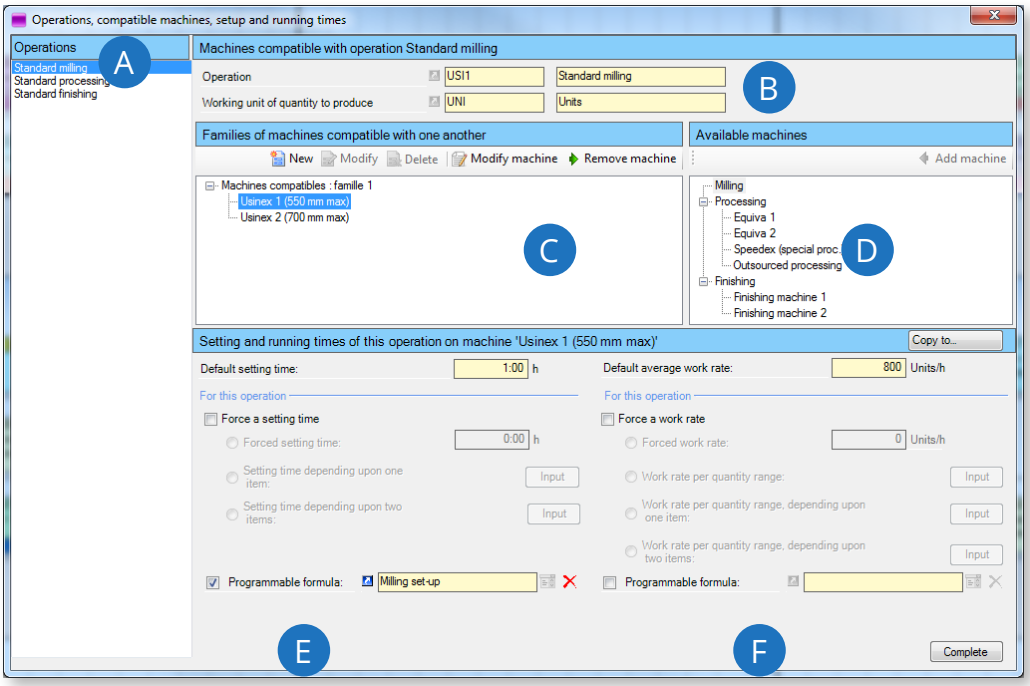
Machine and operation share the same working unit. We can now specify that the **Standard milling** operation is the default operation of the **U1** machine (using the modify button in the machine list).

To be attached to a machine, the operation must share the same working unit.

In the machine list, you can see the associated operations at any time by clicking on the button Associated operations.

The Machines/Operations association can be refined by clicking on **Data** > **Operations and machines** in the ribbon:






- A Operations
- B Selected operation and attached working unit
- C Machines grouped by family
- D Available machines
- E Setting time for selected machine
- F Work rate of the selected machine

This screen offers 2 major functions:

1. Creating machine families compatible with each other. These machines share the same working unit as the operation. In the schedule, moving a job to an incompatible machine displays a warning.

2. Manually forcing the average setting time and the average work rate, or calculating these values automatically:
   - At the operation/machine pair level
   - At the operation/machine pair level, with one element involved
   - At the operation/machine pair level, with two elements involved

**Note**
You can also refine the calculation of setting times and work rates by defining programmable formulas. For more information about programmable formulas, see next section, *Configuring programmable formulas*.

Follow these steps to create families of machines compatible with each other:

1. Select an operation in Zone A (the **Printing** operation in this example).
   Zone B displays the selected operation as well as the associated working unit.
   Zone D displays the machines compatible with each other (same working unit, same operation).

2. Using the mouse, drag machines from Zone D and drop them on a family in Zone C (family 1 is created by default, you can rename it and create other families, see below).

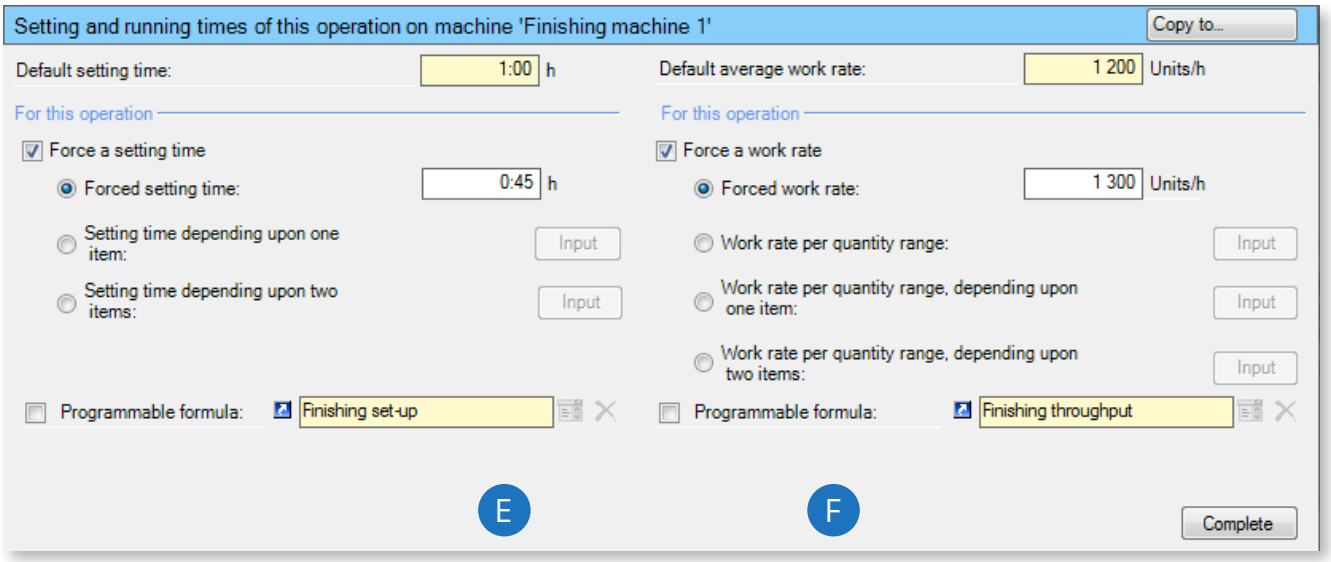
As an alternative, you can select a machine in D and click on Add machine .
You can also do the opposite: Select a machine in C and click on Remove machine.

The following actions are also available:

| Action | Button |
|---|---|
| Create a new family of machines | New |
| Rename a family | Modify |
| Delete a family | Delete |
| Modify a machine | Modify machine (or double-click on it) |

## Setting duration and work rate by machine/operation pair

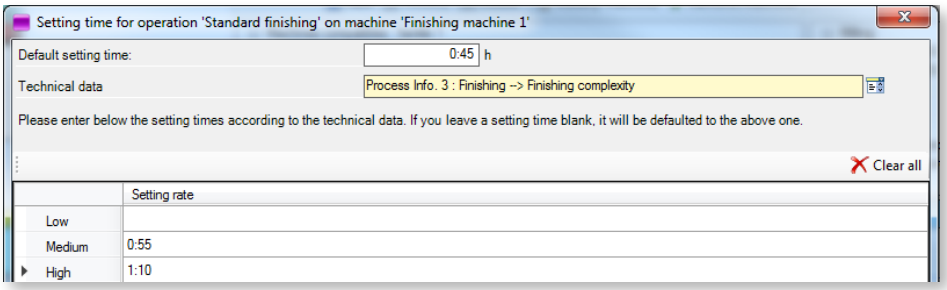
Zone E allows to force a setting time for this operation/machine pair.
Zone F allows to force an average work rate for this operation/machine pair.




☞ To force a setting time, you must first check the ☑ Force a setting time box.

Different options are now available:

- Forcing a fixed setting time which will take priority over the value defined at the machine level (0:25 in the example above).
- Forcing a setting time affected by one or two technical elements, as in the following example:

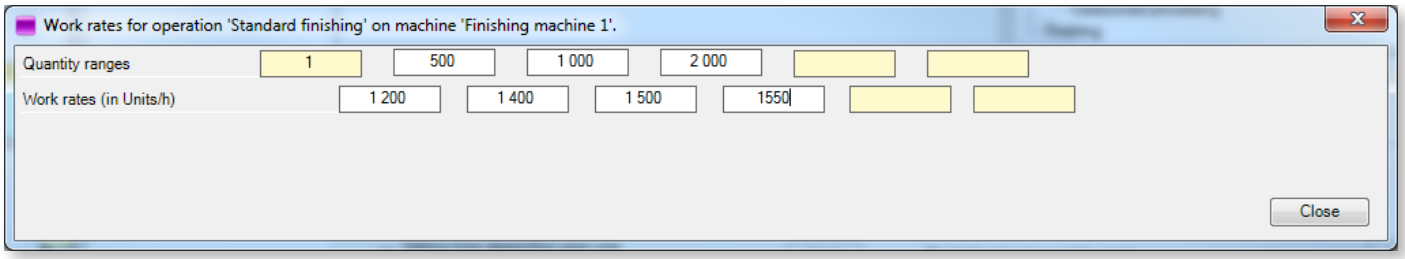



This example uses the **Finishing** > **Finishing complexity** Process Information, based on the **Finishing complexity** reference data. When dealing with a simple milling operation, the setting time remains unchanged (same as the default setting time: 0:45). However, when dealing with medium and high levels of complexity, setting times respectively increase to 0:55 and 1:10.

☞ To force a work rate, you must first check the ☑ Force a work rate box.

Different options are now available:

- Forcing a fixed work rate which will take priority over the value defined at the machine record level.
- Forcing a variable work rate depending on the quantity:

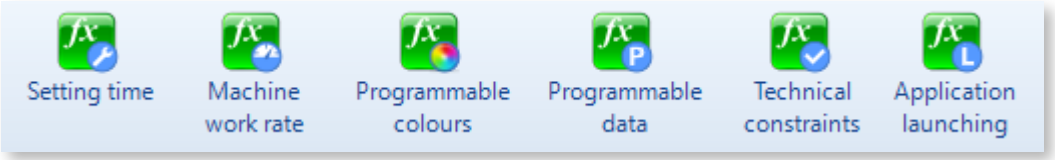



In this example, the Finishing machine 1 processes 1,200 pages/hour for the first 500 pages, then 1,400 pages/hour for the next 500, and so on.
This configuration reflects the increasing machine work rate when processing large series.

# 4.1.10. Configuring programmable formulas

**ADMINISTRATION**

Programmable formulas are available under the **Configuration** tab:




As these icons indicate, programmable formulas affect 6 areas:

1. Formulas modifying setting times according to technical data and precedence criteria. This allows to base setting times on business rules.
2. Formulas modifying work rates according to technical data. Here again, you can include your business rules in the definition of your work rates.
3. Formulas applying programmable colours to planning tickets in order to transmit specific information.
4. Formulas for creating programmable data in order to perform calculations or build character chains. These can for example be used to customize any designation depending on the machine.
5. Formulas based on technical constraints, to account for incompatibilities between machines.
6. Formulas for launching applications, which can be used to display custom buttons in order to open a website or a file. In the job details screen, these formulas can be used to open the corresponding manufacturing file, as a PDF file.

A single programmable formula can include multiple rules.

**Note**
Because programmable formulas use the Visual Basic language, you must have in-house staff with minimal programming skills.
Please feel free to contact our support team for assistance in building these formulas.

## Setting time

The setting time of a machine depends on the operation it executes, on technical data and on the previous operation in the schedule. Indeed, tool assembly and disassembly times are an important part of the setting time. In order to minimize setting times, the planning manager will often seek to group jobs sharing technical, thereby limiting technical changes on the machine.

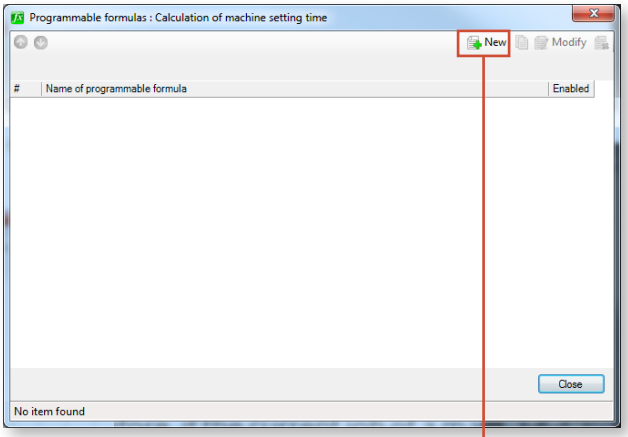
In addition to standard mechanisms already implemented in Direct Planning, you can now build your own rules for altering setting times. Although this advanced feature requires minimal programming skills, DP includes assistance tools to help you. For instance, turnkey functions are included to inform whether technical data differs between the current job and the previous.

When moving jobs, setting times are recalculated in real time to account for precedence. The black bar below the job materialises the setting time so the efficiency of the scheduling can be assessed visually. And with the same colour for common technical items (or tools), you can visualise groups of jobs (more information about groups of jobs in section 5.8, *Optimising planning times*.

### ADMINISTRATION

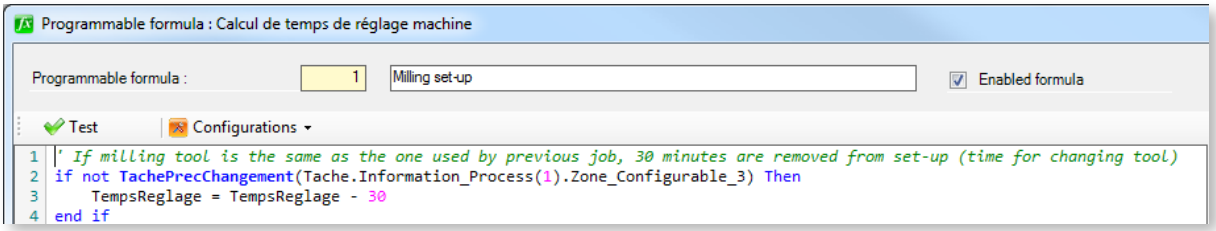
**Configuration** > **Setting time** menu

The list of existing programmable formulas opens. Please note that a programmable formula can only be deleted if it is not in use. Click on **New** to create a programmable formula:



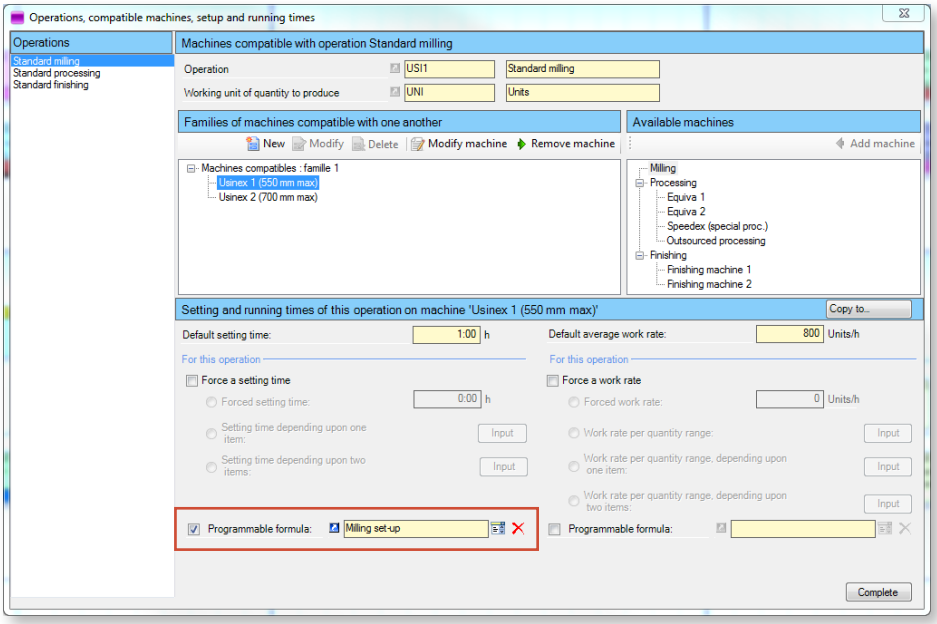

▼ In this example, the programmable formula will use the previous job information to calculate the setting time (the ""Milling tool no." set as configurable area 3 of Process Information 1).

Therefore, if the current job of a machine uses the same milling tool as the previous job, the setting time will be reduced by 30 min.



The **Test** button is available to verify the validity of your syntax, confirmed by the message **Code of formula is valid**.
The **Configurations** button gives access to the schedule data without closing the window.
All new programmable formulas are enabled by default. Uncheck the box ☑ Enabled formula to disable them.
To create a programmable formula, various objects, variables and functions are available. Furthermore, Direct Planning includes a set of Visual Basic standard keywords. Because this language features hundreds of keywords, only those relevant keywords for standard formulas are provided here.

When your programmable formula is created, go to the **Data** > **Operations and machines** menu to attach it to one or more machines:




◄ The **Milling set-up** programmable formula is now attached to the **Usinex 1** machine.

Click on to choose among the programmable formulas you created or on to modify the selected formula.

## Machine work rates

Programmable formulas offer the ability to describe in details machine work rate values depending on technical data, or to simply alter the work rate values already entered in Direct Planning.

For example, you can introduce work rate modification coefficients based on length ranges of the element to produce. This reflects the decrease in work rate for the smaller elements which are less stable when processed.

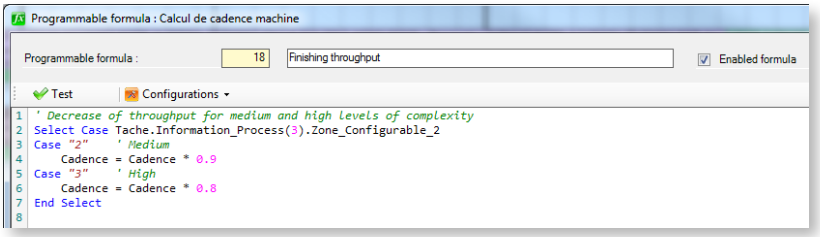
You can also introduce multiplying (or dividing) work rate coefficients based on certain technical data.

The underlying principle is the same as for for setting times.

## ADMINISTRATION

**Configuration** > **Machine work rate** menu

The following programmable formula allows the definition of the machine work rate:




This programmable formula defines a work rate coefficient based on Configurable area 3 (Finishing complexity) for Process Information 3 (Finishing). Please note that a coefficient below 1 decreases the work rate (conversely, a coefficient above 1 translates into an increase).

## Programmable colours

As standard, Direct Planning offers the ability to colour all or part of the schedule tickets through various mechanisms. You can write your own colouring rules to convey the most visually relevant information to the planning manager.

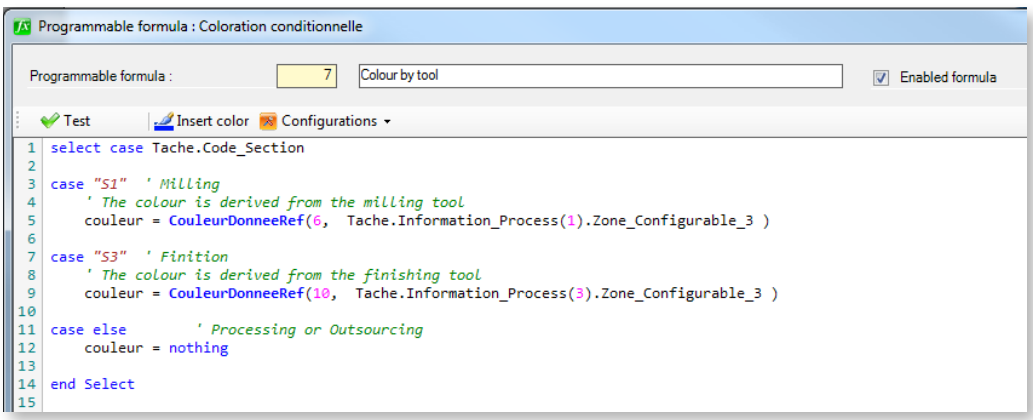
For instance, for a numeric technical data (length, width, etc.), colouring rules can be created for each range of values.

The underlying principle is the same as for setting times and work rates.

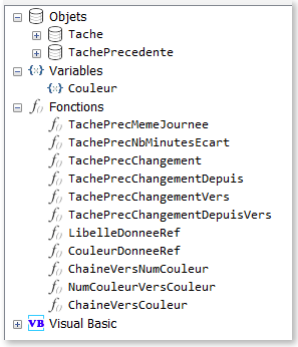
## ADMINISTRATION

**Configuration** > **Programmable colours** menu

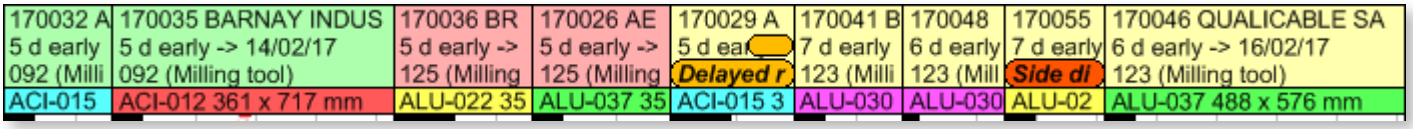
This programmable formula results in a conditional colouring:



When you create a programmable colour, you declare a usage context. The above formula being used in a **Job** context, the formula building tools are filtered to display only the relevant tools:




This formula is used to apply the same ticket colour to all jobs sharing the same tool (3rd line in the next screenshot):

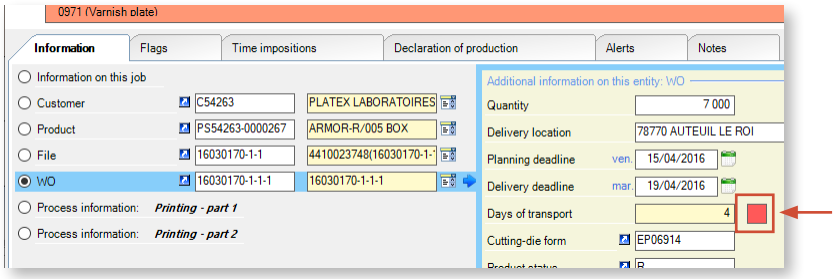



We will see in the dedicated section that conditional colouring can help you *optimise planning times*.

The administrator has access to this colouring in the configuration of display modes. Users can also select it under the **Display > Colour by** tab.

This is a basic example of conditional colouring. For numeric technical elements (such as lengths and widths), these rules can also apply to ranges of values, and job colours can depend on days ahead/behind against deadlines.

**You can also assign** a coloured square to a programmable data.

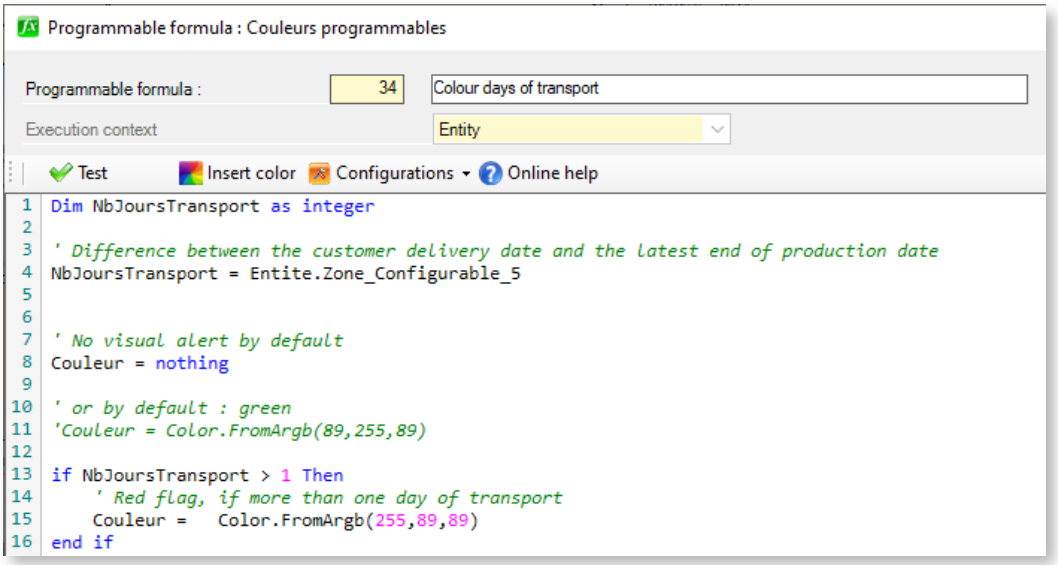



In this example, we created the programmable colour linked with the programmable data **Days of transport**, specifying that if this data is above 1, then a red square is displayed.

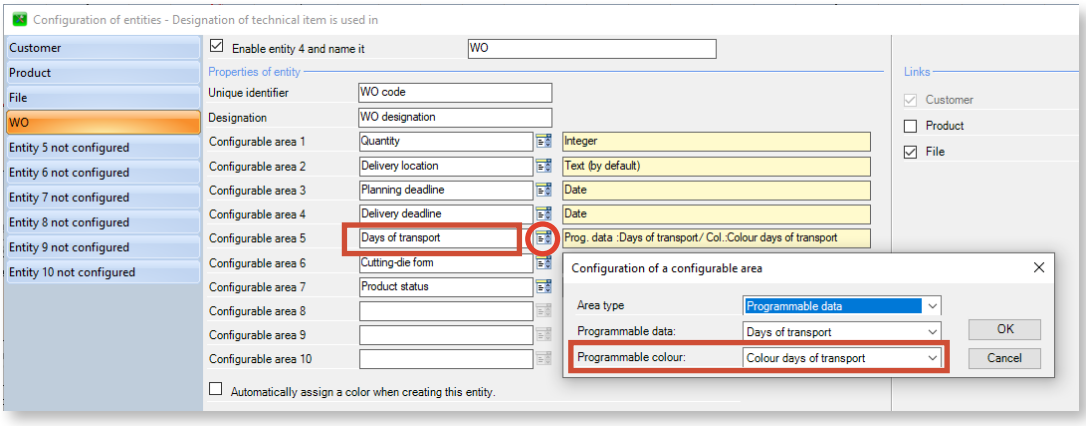
## ADMINISTRATION

**Configuration** menu> **Programmable colours**

Below is the programmable formula used to create this coloured square:




Because this programmable formula applies to an entity, you must go to the **Configuration** menu > **Entities** to enable its display (in configurable area 5) :



## Programmable data

A programmable data is a typed data (text, integer, date, etc) which can be used to perform calculations or build chains of characters.

This way, you will be able to create custom designations in order to the technical data the most relevant based on the machine on which the planning ticket is placed. Combined with Process Information, this will enable a deep customization of the information displayed in the schedule.

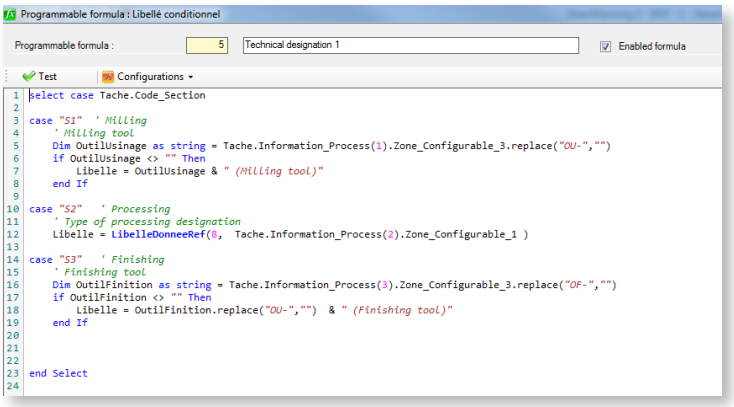
You can also assign a programmable data to a configurable zone of an entity or process information. Therefore it will be displayed in the job details, as a non-enterable field.
A programmable data is therefore linked with a usage context: jobs, entities or machine record.

The underlying principle is the same as for setting times, work rates and programmable colours.

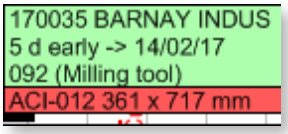
### ADMINISTRATION

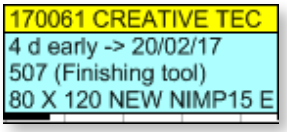
**Configuration** > **Programmable data** menu

This programmable formula generates conditional designations:

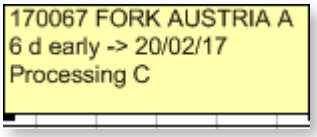



This formula customises the display of tools in the schedule according to the **Milling** ("'milling tool") or **Finishing** ("finishing tool") section:



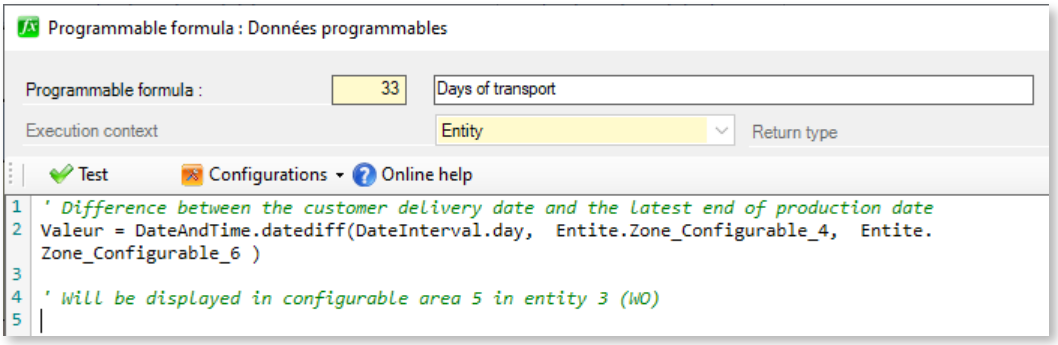




If the job is placed in a processing section, the ticket displays the type of processing:

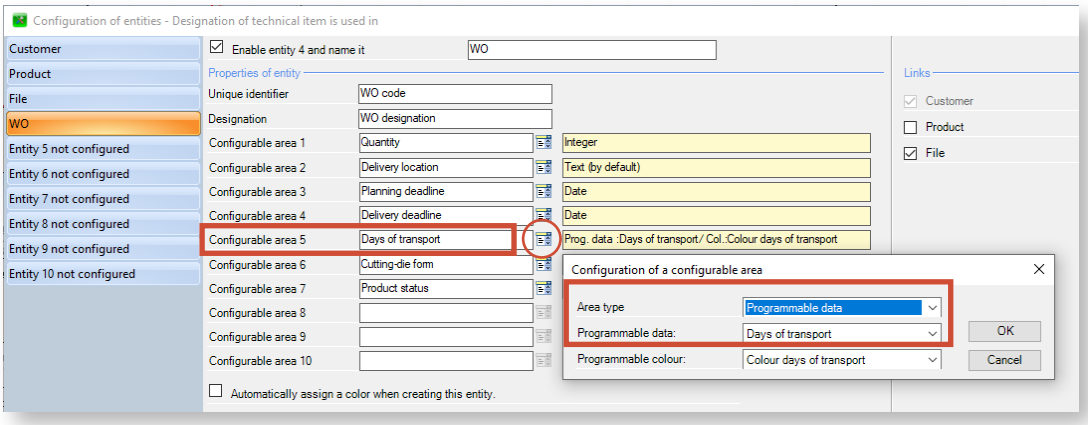


## ADMINISTRATION

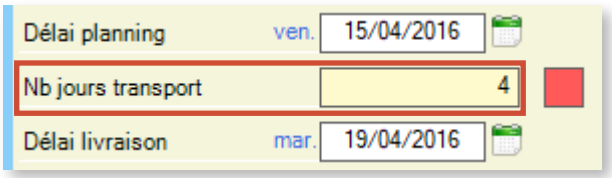
Below is an example of calculated programmable data:




As already seen for the programmable colour, go to the **Configuration** menu > **Entities** to enable its display in the job details screen (in configurable area 5) :




For the WO entity, this formula calculates the difference between configurable area 6 (delivery time) and the configurable area 4 (schedule time).




The calculated value displays in the job details window.

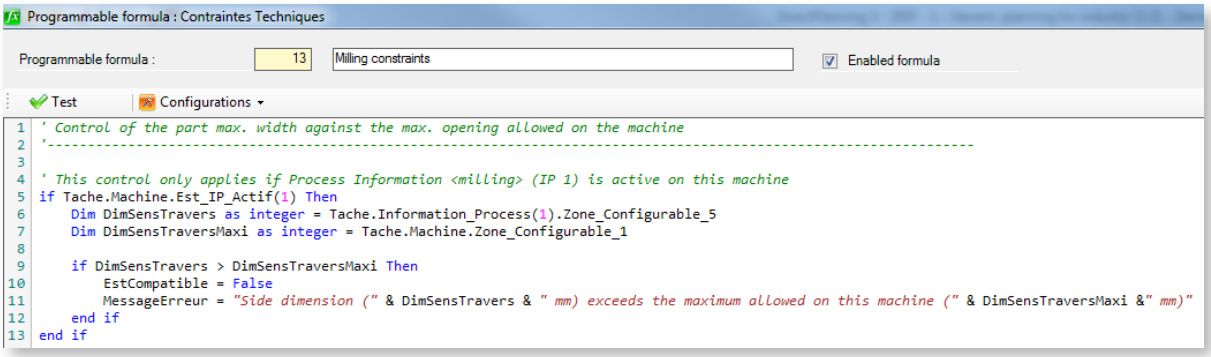
## Technical constraints

The purpose of **Technical constraints** programmable formulas is to offer custom controls over machine compatibility. These controls are performed when the planning manager moves a job from a machine to another. This ensures the compatibility of technical data between the job moved and the destination machine.

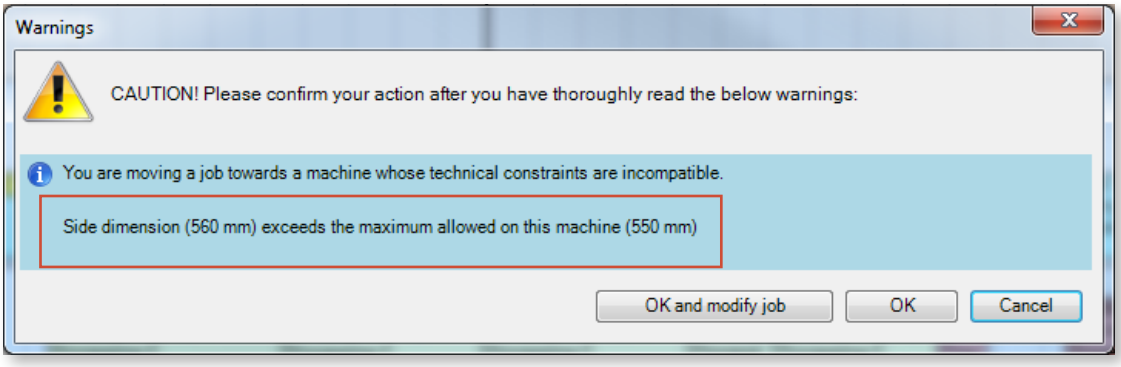
### ADMINISTRATION

**Configuration** > **Technical constraints** menu

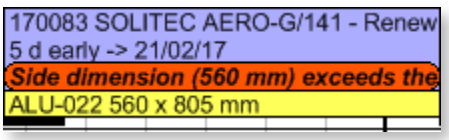
This is a Technical constraints programmable formula:




This programmable formula indicates the max. opening supported by the machine. The “MessageErreur =” variable allows the definition of a custom message informing the planning manager about the source of the incompatibility encountered while moving the job to an incompatible machine.




If the planning manager ignores this message, an alert still appears on the affected job:



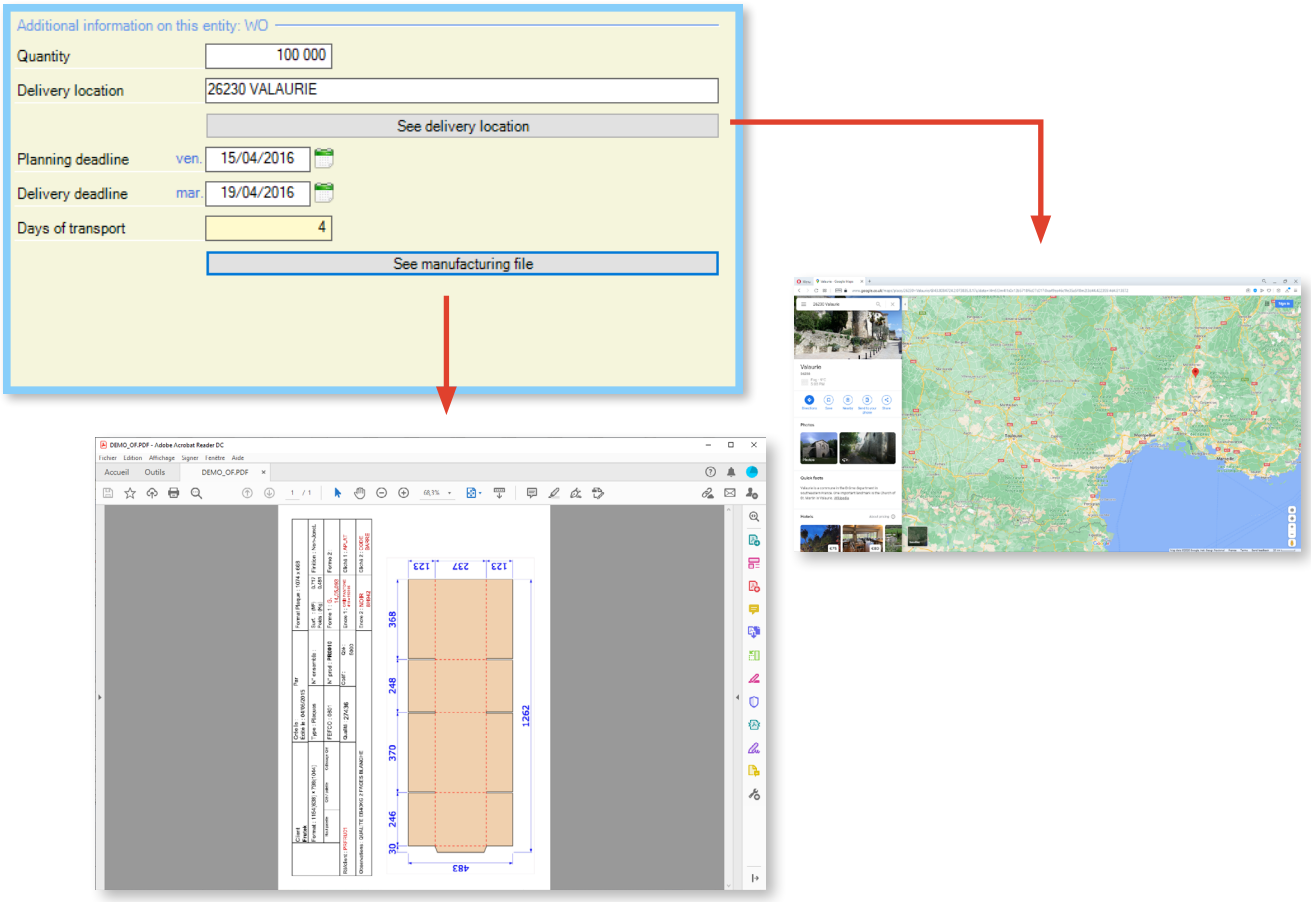
## Application launching

The **Application launching** programmable data offer you the ability to launch an application or a URL using arguments derived from Direct Planning data.

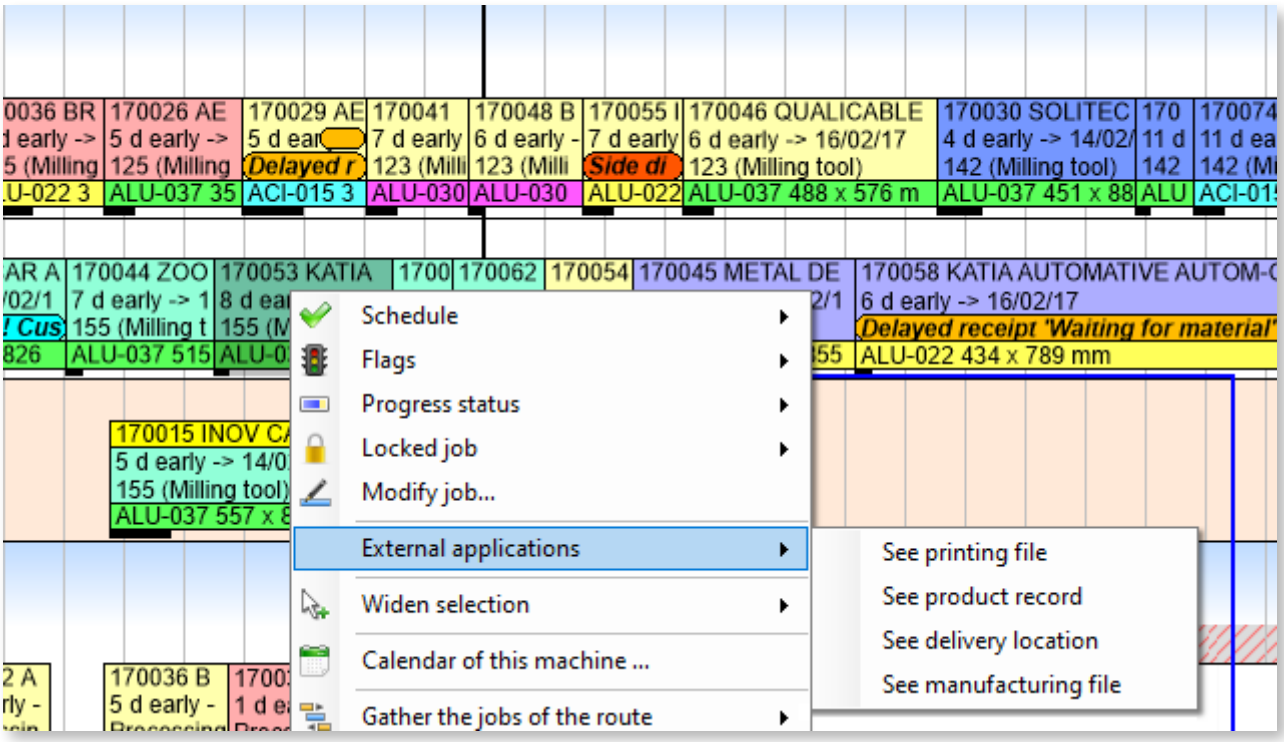
For example, you will therefore have the ability to run an application giving more details about the scheduled job, or open a manufacturing file as a PDF file format.

For this, you will have to create an Application launching formula and link it with a given context: entity, job or machine record. Within these contexts, you will assign a configurable area with this application launching formula. When displaying the data, this configurable area will be materialized as a button which will enable you to launch the configured application.

In the example below, we configured the launch of an Internet address directing to Google maps and containing the delivery location as a variable. The **See delivery location** button will open the address in the default web browser of the station.
The **See manufacturing file** button points to a network location where are configured the address and name of the PDF file with the WO number as variable. The file will open in the default reader of the station.



When there are Application launching formulas created, you can run the corresponding actions with a right-click on a job.
All available actions are listed under the External applications sub-menu:



# 4.1.11. Creating display modes

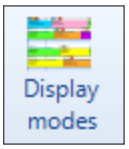
This original function offers the ability to define as many display modes as you want depending on the profile and viewing needs of each user.
The display mode can be changed under the **Display** tab.
It can also be configured by default per user.

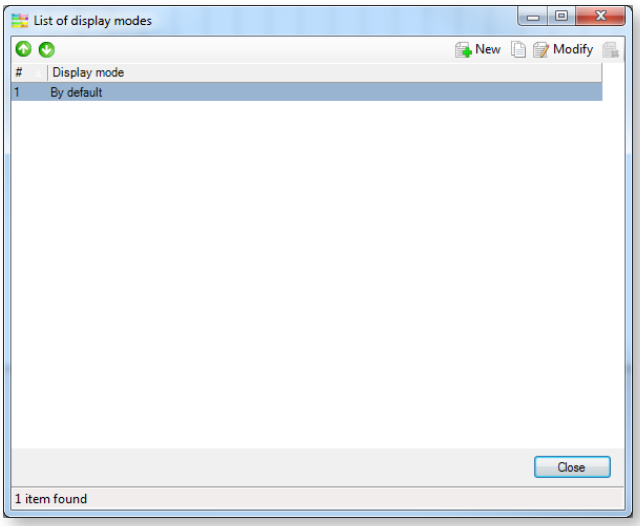
### Our advice

While the creation of display modes is optional because Direct Planning opens with the default display mode (which cannot be modified or deleted), it is nonetheless recommended. When your own display modes are defined, you will have to disable the default display mode (see section 4.3.12 *Creating users*).

### Administration

The configuration of display modes is available under the **Configuration** > **Display modes** tab:



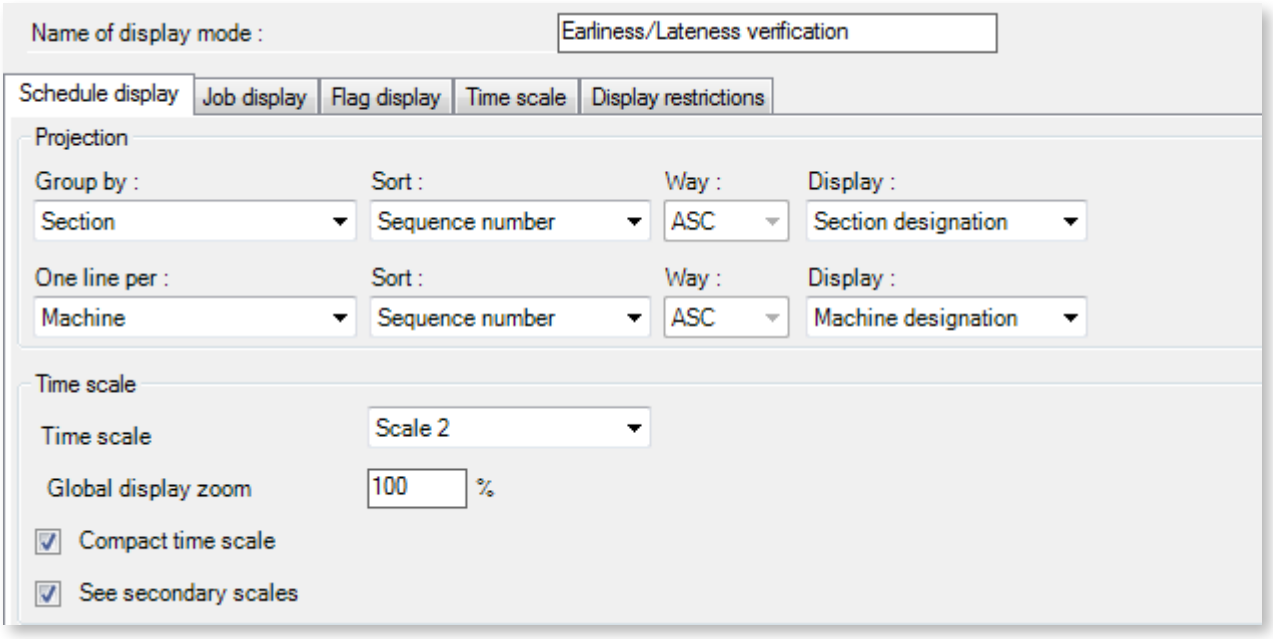




When clicking on **New**, the display mode creation window opens, with 5 tabs:

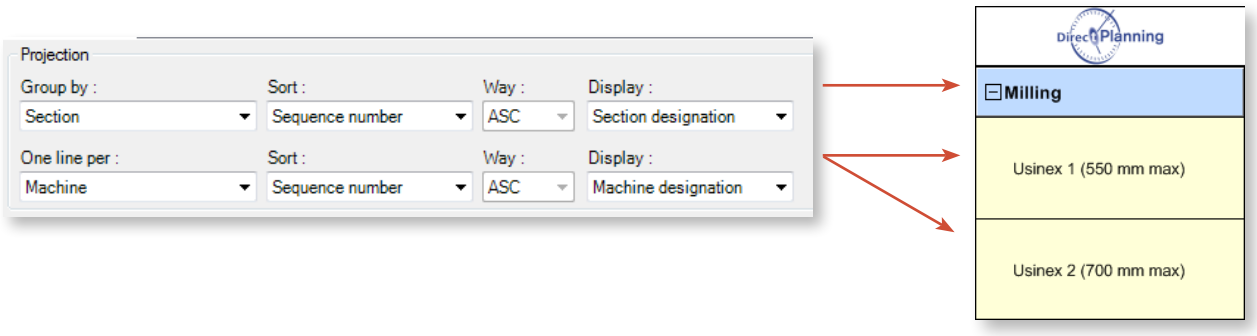
- Schedule display
- Job display
- Flag display
- Time scale
- Display restrictions

The following sections discuss in depth each of these tabs. Therefore, they are reserved to the Direct Planning administrator.

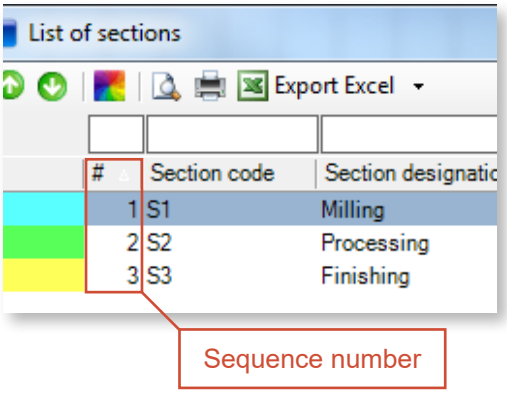
## Schedule display



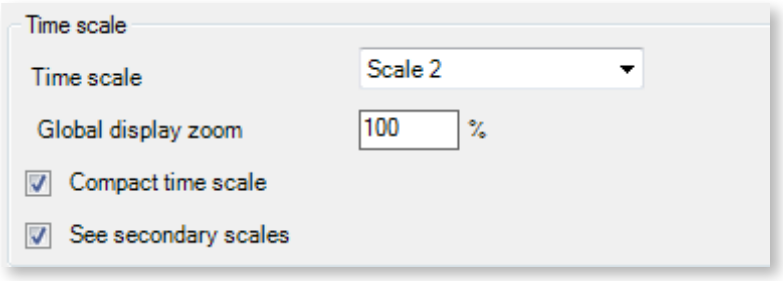

This first pane is used to modify the overall display of the schedule, including the projection section:




By default, sorting is made on the sequence number, which is the configuration order of your elements (Section/Machine in this example) and that you can change by clicking on the green arrows in the top-left corner:



In the schedule display, you can also configure the time scale:

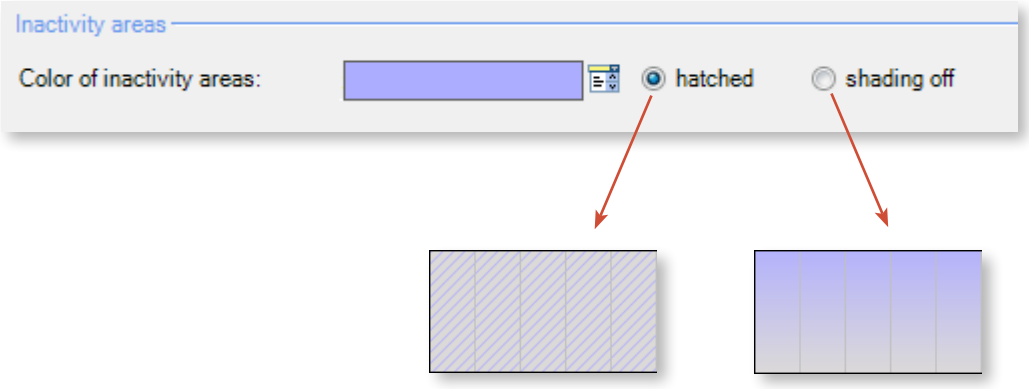



These options enable to set the default time scale (1 to 5) of the display, as well as the default global zoom level.

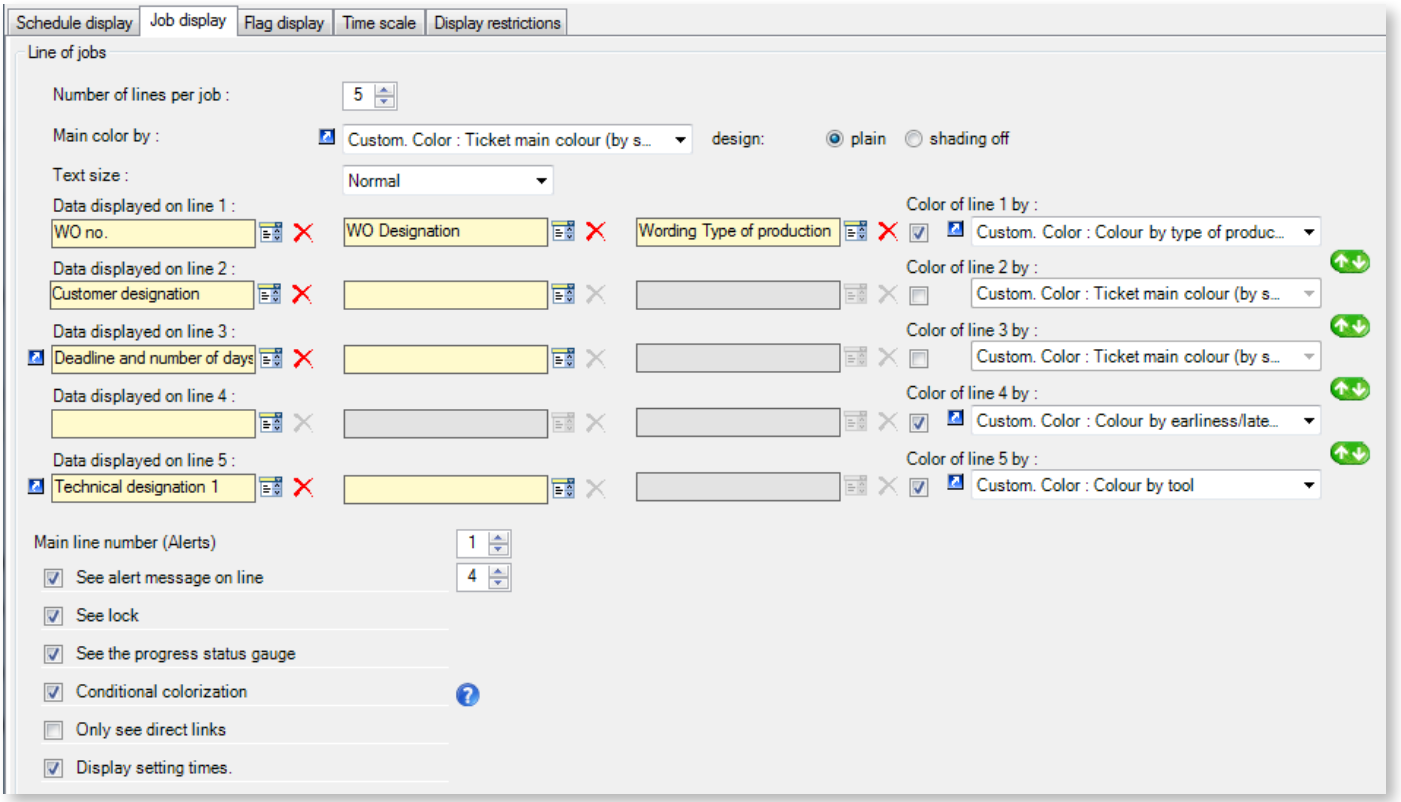
Compacting the time scale saves space on the schedule by not displaying weekends when they are not worked.

Secondary graduations make it easier to consult the schedule thanks to grey vertical maker lines.

Finally, this tab offers the ability to customise the aspect of inactivity areas. Inactivity areas are regular or occasional periods during which the resource or machine does not operate (outside working time, weekend, hardware servicing periods, public holidays, vacancy, sick leave, machine maintenance, ...):

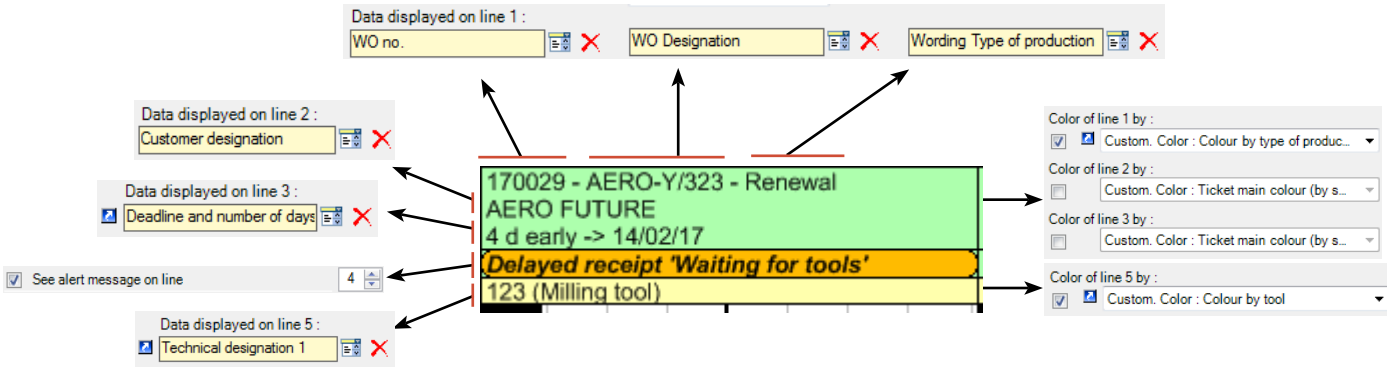


## Job display

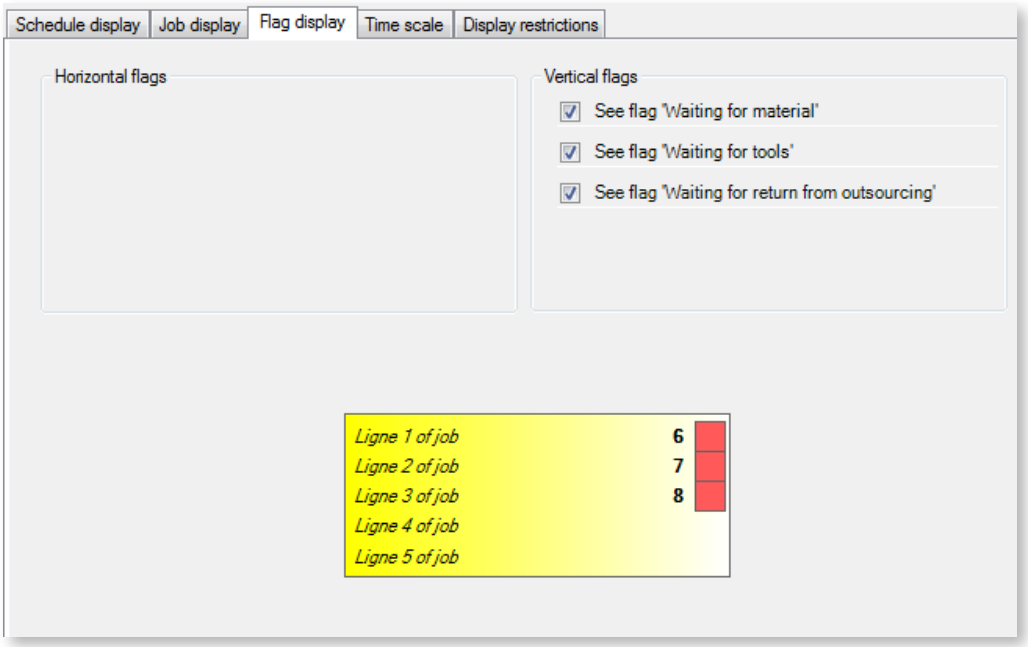



This second pane offers the ability to change the aspect of jobs in the schedule.

The configuration above gives jobs the following aspect:



## Flag display

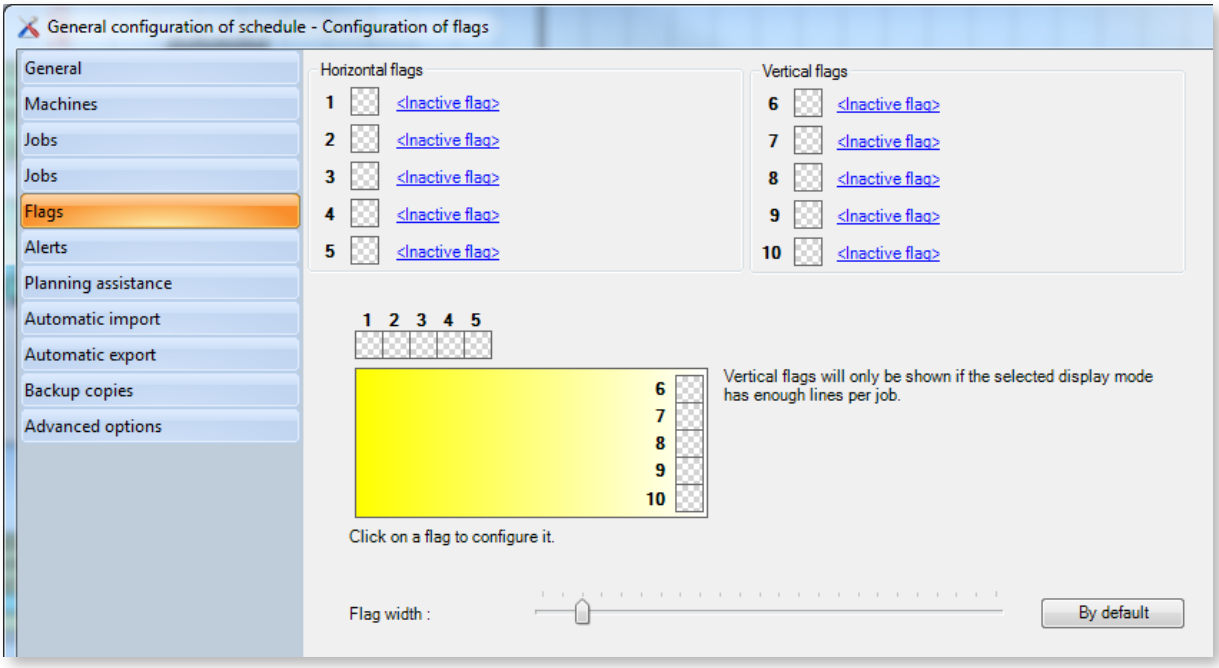



This tab offers the ability to select the visible flags in your display.

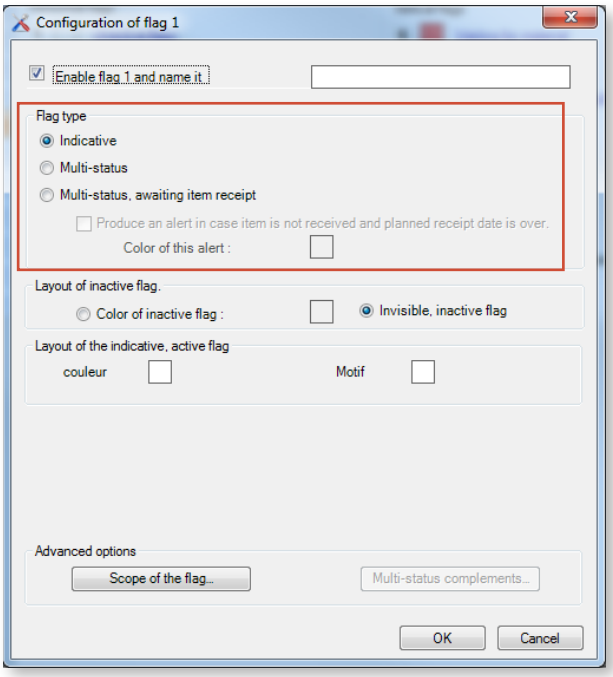
Flags are coloured and sometimes hatched bullets located above and/or on the right of jobs. They enable the planning manager to view instantly the different job status.

They serve the same purpose as paper clips and other stickers put on traditional wall schedules.

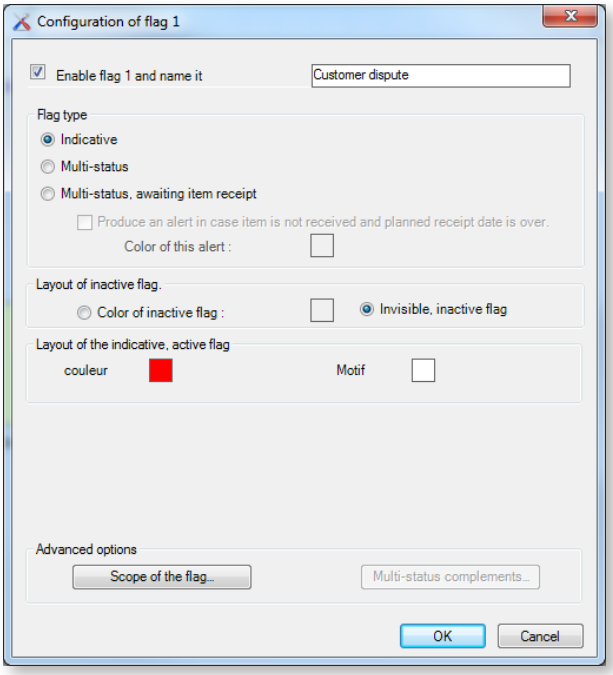
To create a flag, go to the **General configuration** of Direct Planning:




Choose the type of flag to create, horizontal (left) or vertical (right), and click on **<Inactive flag>**.



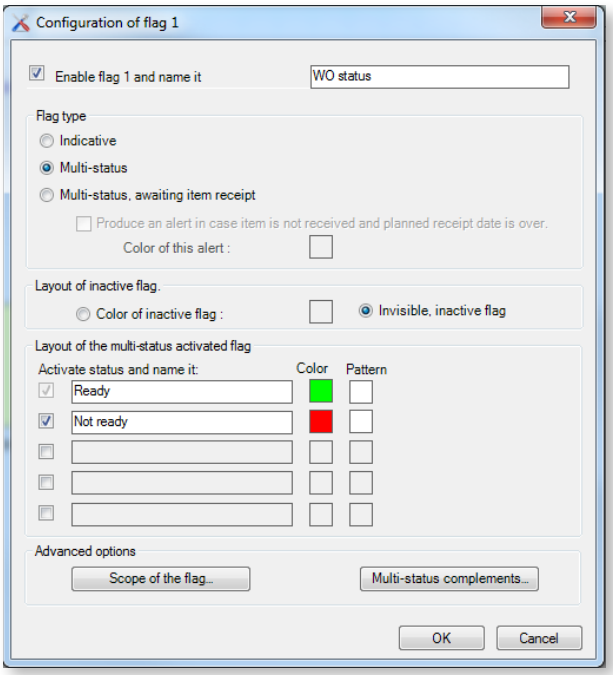

As suggested by the window above, there are 3 types of flags: **indicative**, **multi-status** and **multi-status, awaiting item receipt**. Let's look more closely at each of these flags:




◄ Indicative flag, the simplest case as an indicative flag is a two-state flag: Active or inactive. You can think of it as a raised or lowered flag, or an On/Off switch.

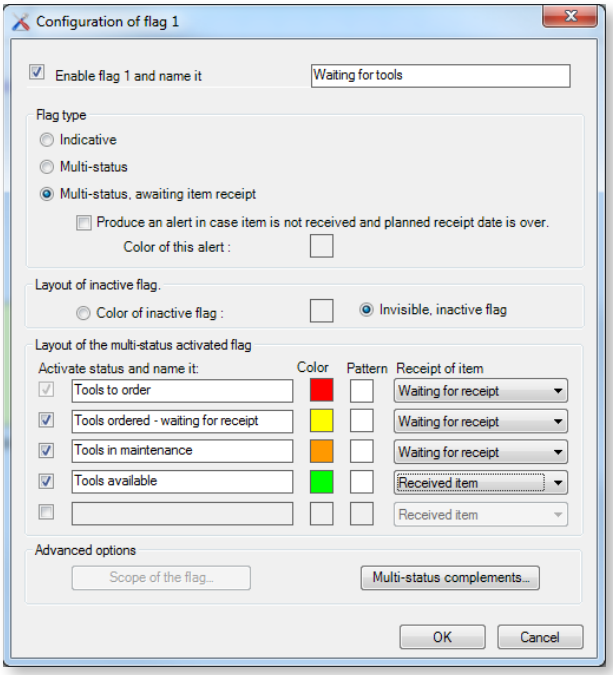
In the example opposite, the flag is shown when active and hidden when inactive. It is also possible to display inactive flags, in which case you can choose the colour by selecting the **Colour of inactive flag** line.

In case of flag modification, the **Scope of flag** lets you choose whether this modification applies only to the current job or to all jobs sharing the same entity.




◄ Multi-status flag: a multi-status flag can have up to 5 states. Designation, colour and motive can be defined for each status.

When creating of modifying jobs, users can enable or disable the flag for each job. As with indicative flags, inactive flags can be shown or hidden.
When the flag is active, you can define a colour and a subject for each of the 5 available states (you do not have to use them all).




◄ Multi-status, awaiting item receipt flag: While showing similar characteristics as those described previously, this flag adds the notion of item receipt.

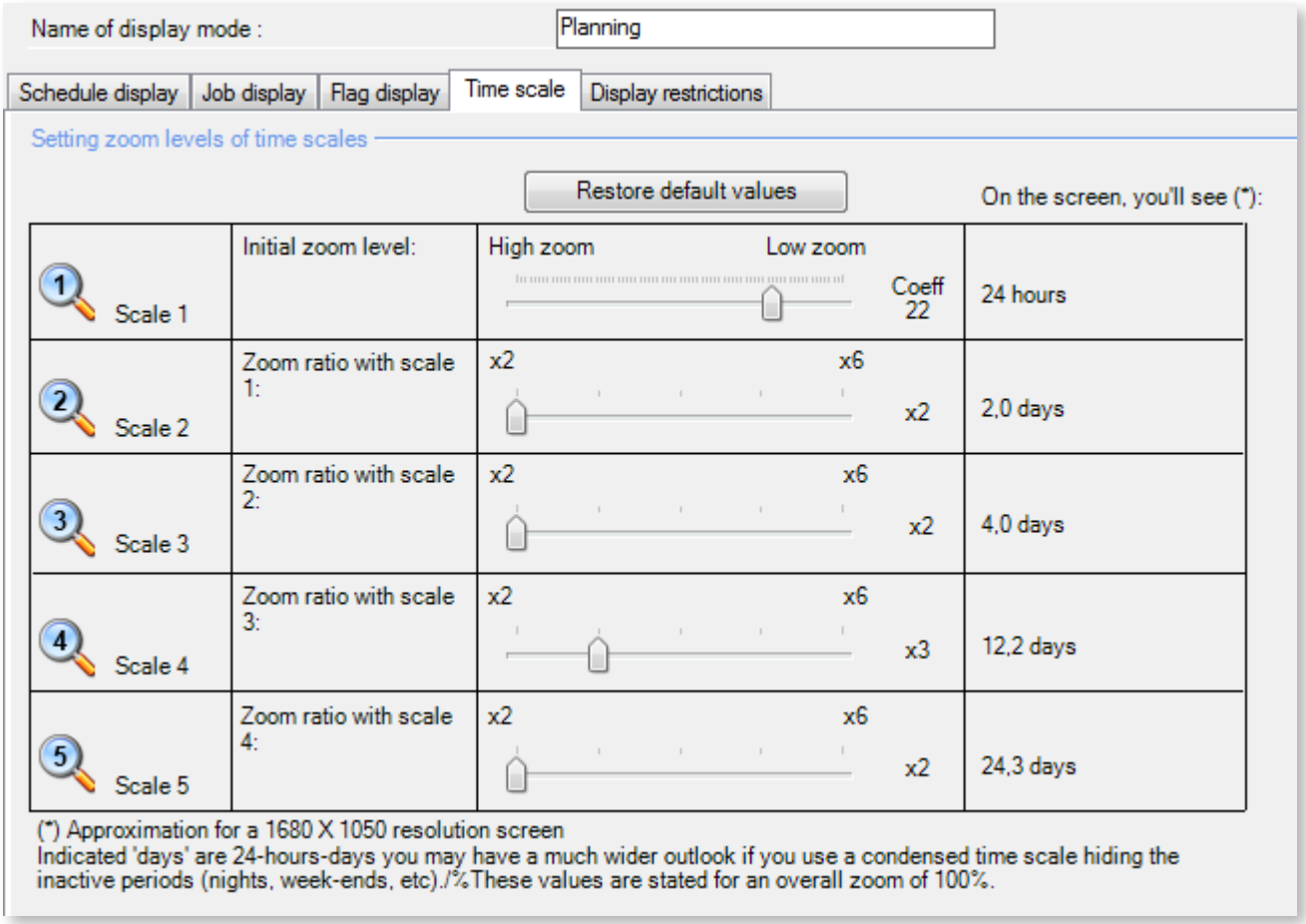
Unlike the other flags which are strictly indicative, this flag introduces a strong constraint for the job earliest start date.

The earliest start date constraint applies to the job on which the flag was activated. Because of that, the notion of scope does not exist for this flag.

If the planned date has come and the tool has not been received, an alert message will indicate the delayed receipt.

See section 5.2, *Creating jobs manually*, to see how flags are used at the job level.

## Time scale

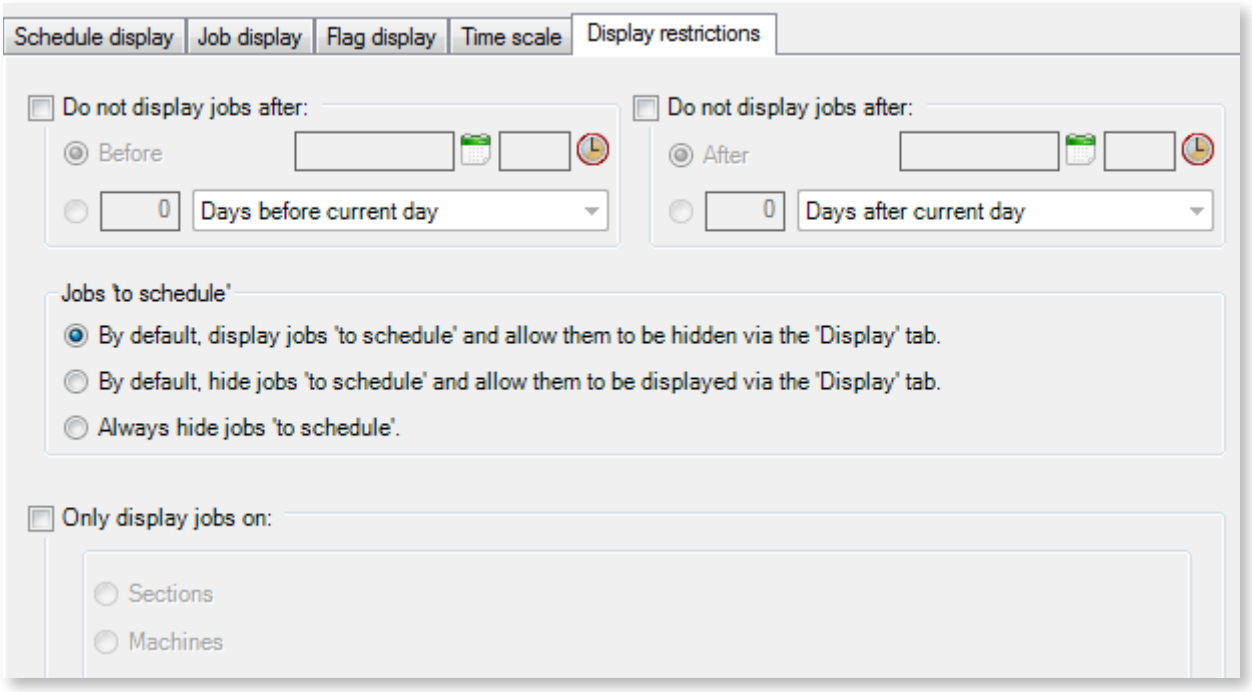



This tab offers the ability to define the different zoom levels associated to this display mode.

Start by modifying the zoom level of scale 1.
Higher magnification will display a smaller time span, which is useful when planning short jobs (less than an hour).
Conversely, smaller magnification will display a larger time span.

Scale 2 is the result of a multiplying factor applied to scale 1.
The same applies to each other time scale, which is the result of a multiplying factor applied to the previous scale.

## Display restrictions



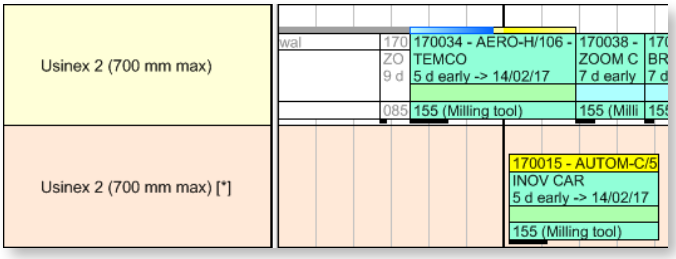

This last pane is used to filter the jobs displayed by the current display mode.

In the upper part, a range (date and time) can be defined through selection in the calendar or in relation to the current date. For example, it is possible to display only the jobs located 90 days before and after the current date.

### Our advice

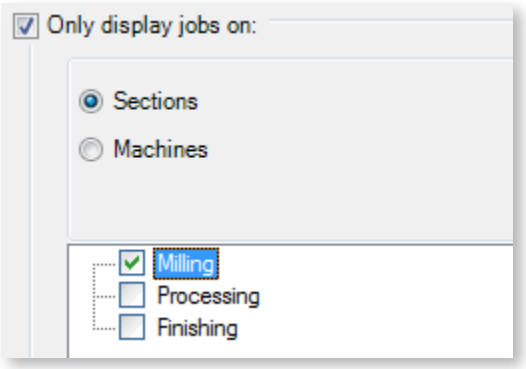
It is strongly recommended to configure the current display mode to ignore the jobs older than 2 weeks. This will optimise the time required to load the schedule. However, display modes can be created (via duplication) for elapsed periods, for logging purposes.

At the centre of this screen, you can choose the default display mode of jobs “to schedule”. As a reminder, jobs to schedule are jobs which need to appear on the schedule without being set to a specific date.




◄ Jobs to schedule are displayed on a special line in the schedule, under the actual planning line, in a different colour and with the machine name followed by the **[*]** character

Finally, the lower part of the tab allows the schedule to display only the jobs attached to specific machines/sections. This allows to show some users only the machines/resources relevant to them:




◄ This schedule will address the needs of operators working only with milling machines. Indeed, their schedule will not be cluttered with data related to other sections.

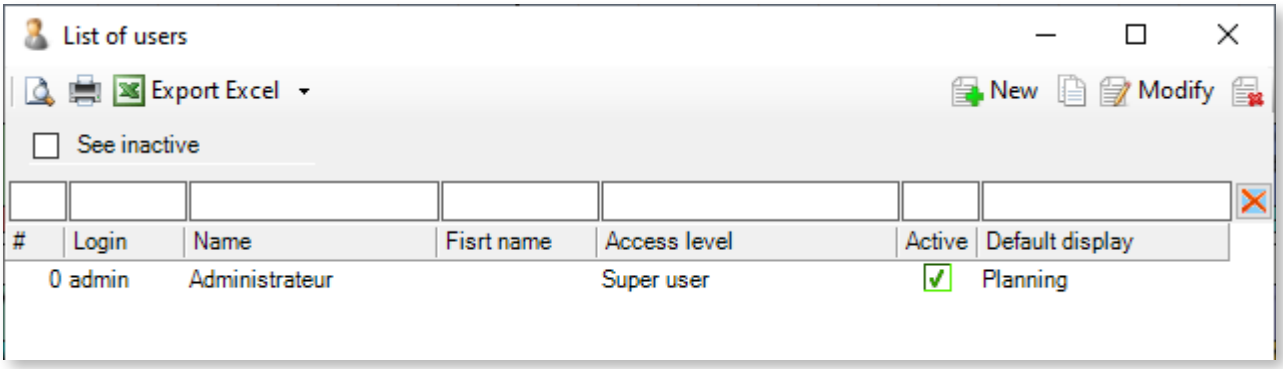
Refining this filter can be performed by clicking on **Machines**. For instance, if an operator only works on milling machine #1, the planning manager can limit the scope of his display to show only this machine.

# 4.1.12. Creating users

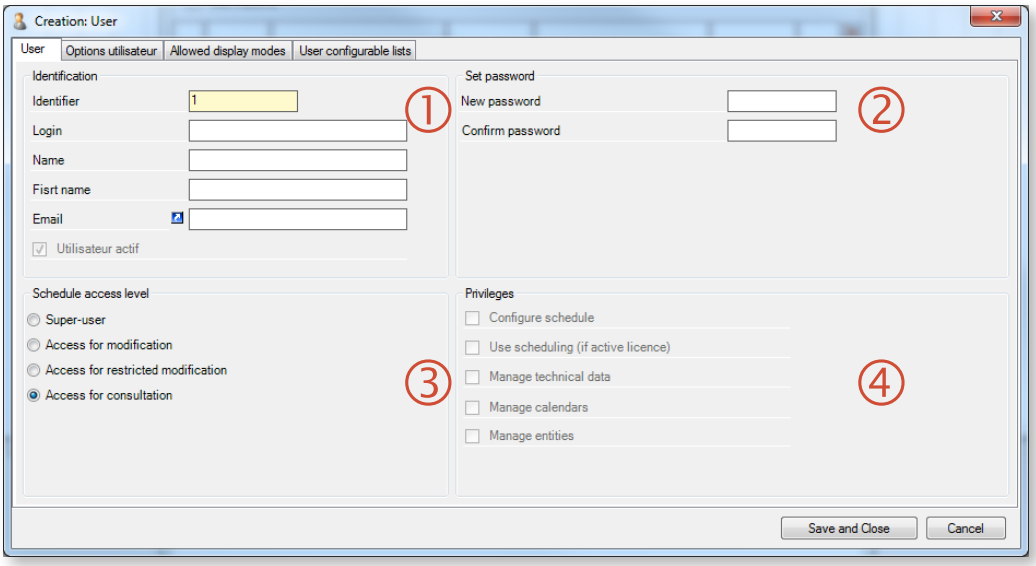
User management is performed via the **List of users** menu.

**ADMINISTRATION**

This menu is available from the ribbon, under the **Configuration** > **Users** tab




Because no user have yet been created, this list is still empty except for you, the administrator. Click on **New** to create users:




The first tab **User** allows to enter basic information about the user. It consists of 4 zones.

① User credentials: Identifier (automatic and non-editable), Login (required and non-editable), Surname (required and editable), Forename (optional and editable), Email (optional and editable) and Active

user (checked and editable).

② User password (required and editable).

③ Direct Planning access level:

- Super-user (admin): Always created automatically for any new schedule, it cannot be deleted. It is strongly recommended to modify the associated default password (admin) when creating the schedule.
  He has all privileges (④), and none of them can be waived from him.
  Only he can grant the same rights to another user.

- Users with Access for modification rights can schedule jobs and modify the schedule.
  Their privileges (④) are those granted by the administrator.

- Users with Access for restricted modification rights have no privileges (④).
  It typically designates a production operator reporting a progress status to the planning manager or an operator updating certain flags after receiving material or tools.

  This type of access allows to:
  - Update the declaration of production (performed quantity and duration)
  - Modify flags (except notes)
  - Create user alerts in job details (Declaration of production tab)
  - Modify job description and configurable areas

  Among other things, it does not allow to modify:
  - Anything regarding the placement of jobs in the schedule
  - The planned quantity and duration
  - Technical elements

**Caution**: Creating users with access for restricted modification requires to enable the automatic import function in the **Configuration** > **General configuration** > **Automatic import** menu.

④ Privileges granted to users (see above).

- Configure schedule: allows users to access the **Configuration** tab, notably to manage users.

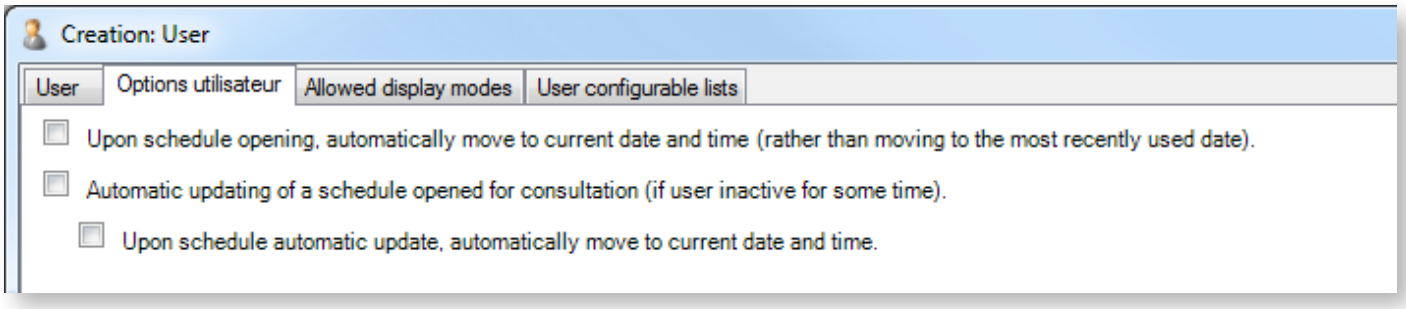
- Use scheduling: the scheduling function is no longer maintained. The corresponding privilege is therefore outdated and will be removed from the next version of Direct Planning.

- Manage technical data: unchecking this box allows users to view (but NOT modify) the resources (project mode), sections/machines, working units.

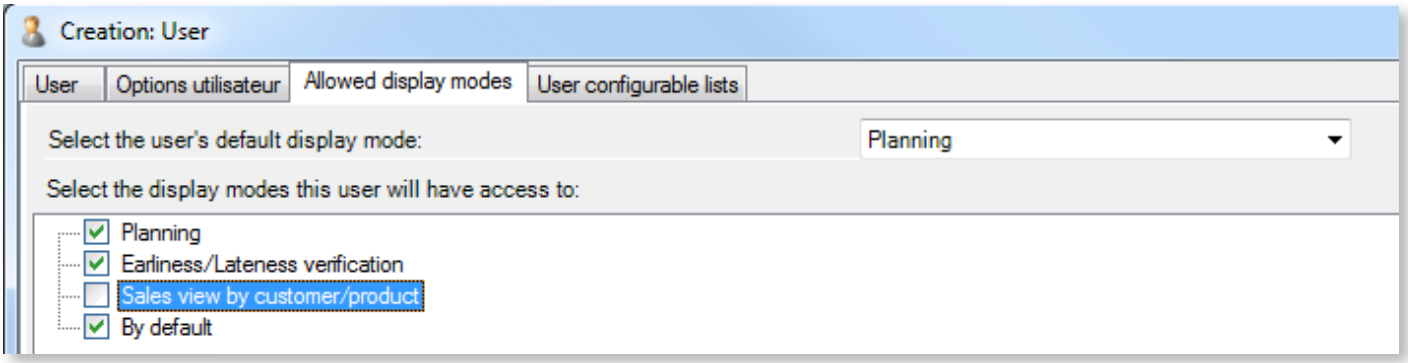
- Manage calendars: unchecking this box allows users to view (but NOT modify) the characteristics of calendars (standard days, standard weeks, machine operating times). More information about

these notions in section 5.5 *Managing calendars*.

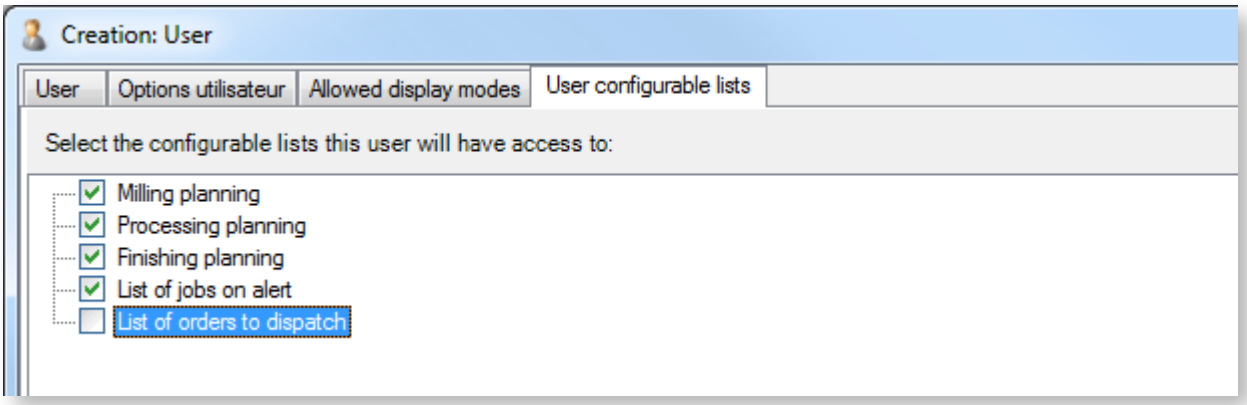
- Manage entities: unchecking this box allows users to view (but NOT modify) entities.




The second tab, **User options** allows the definition of opening and positioning options in the schedule. Users can modify these setting under **File** > **User options** > **For this schedule**.




The third tab, **Allowed display modes** allows to select the display modes available to selected users. This option is useful to display only the relevant sections/machines.



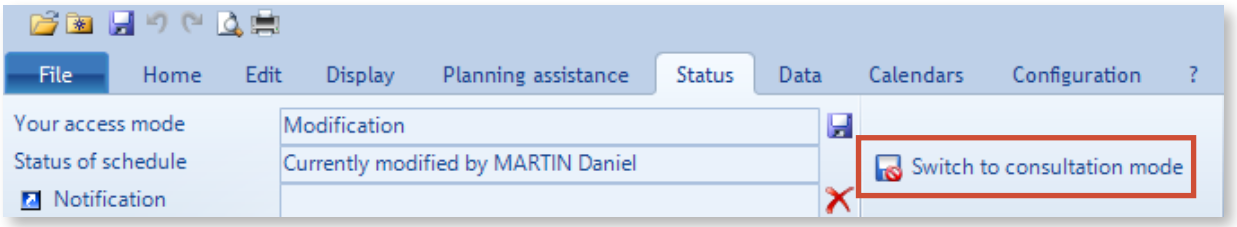

Similarly, the **User configurable lists** tab is used to filter the lists of jobs available to users. In the same fashion, the objective is to select the relevant lists to their usage. More information about configurable lists in the next section.

When you are done creating/modifying users, click on **Save and close**.

## Simultaneous usage in modification by multiple users

If your login benefits from the modification authorisation, you open the schedule systematically in modification.

1. If nobody has opened the schedule in modification before you, you habe the access in modification. If you do not have any modification to make, or if you have finished them, you can switch to consultation mode :



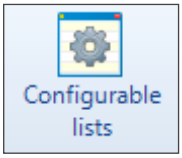

2. If another user is already making modifications :
   - This user will be notified of your connection attempt
   - You will be connected to the schedule in consultation
   - You will be notified when the access in modification will be freed and available again
   - You will then be able to use the **Status** tab to **Switch to consultation mode**

# 4.1.13. Creating configurable lists

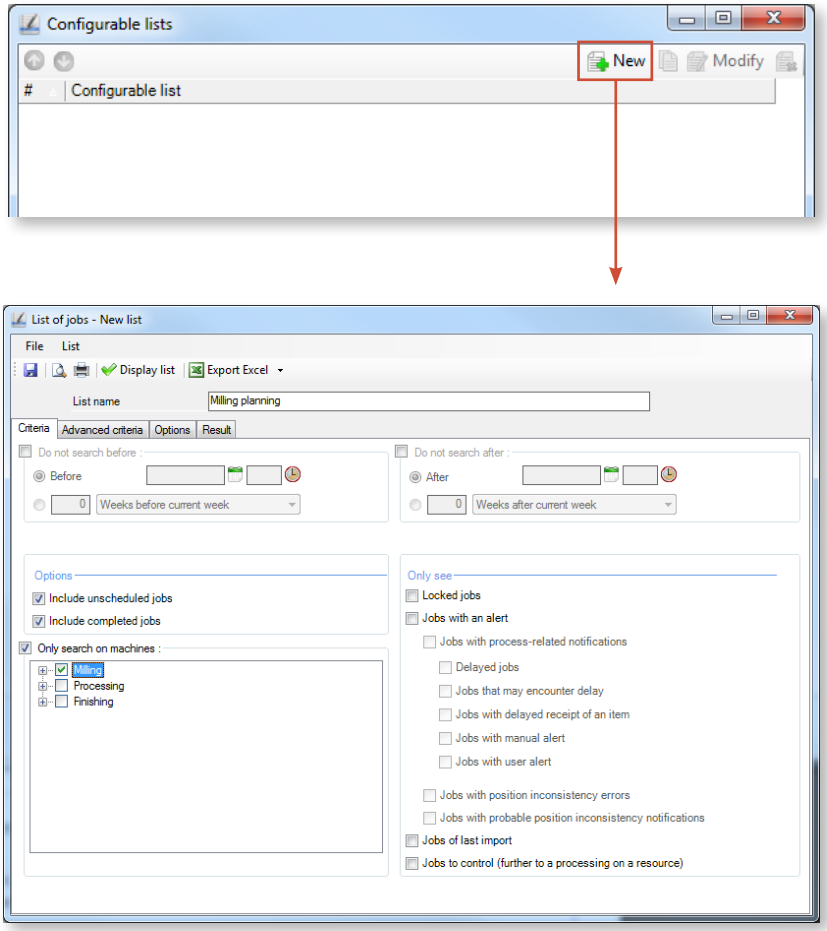
Configurable lists let you define lists of jobs.
You can configure lists customised for each user, and save these lists for future usage.

## ADMINISTRATION

Configurable lists can be created/modified by clicking on **Configuration** > **Configurable lists** in the ribbon:



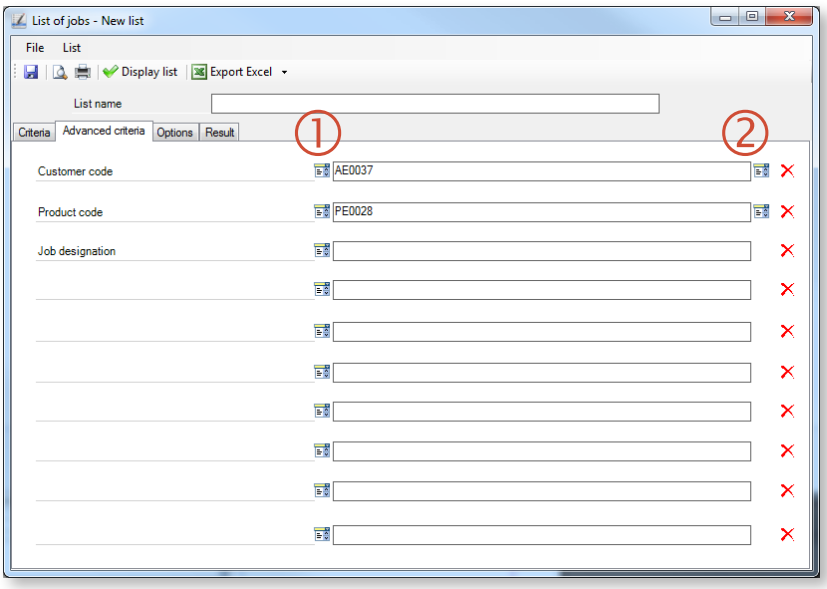

Lists can be viewed on screen, printed or exported to Excel (in xlsx native format, even if Excel is not installed on the station).




◄ In this example, the list **Milling planning** is created to include only the jobs performed by machines belonging to the milling section.

The criteria tab is available to select the most common job filters (time-related criteria, sections/machines, jobs in alert, etc.).

If you wish to create lists based on more advanced criteria, click on the **Advanced criteria** tab:

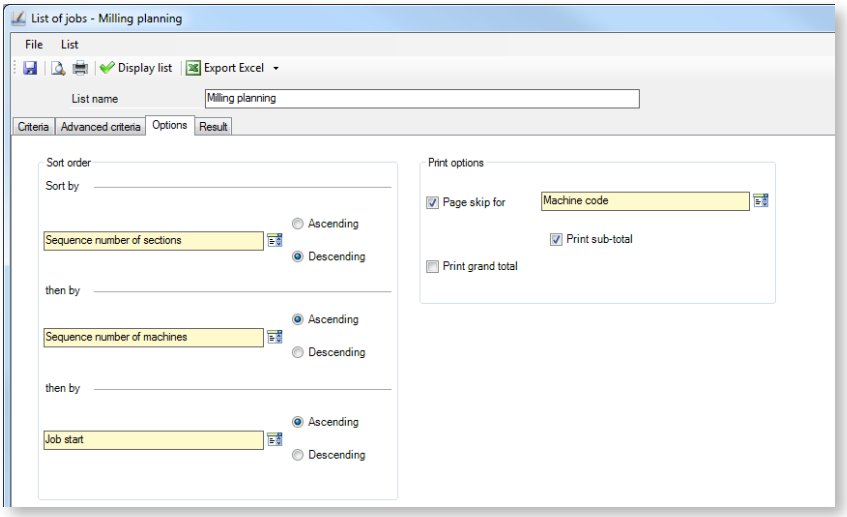



◄ In this example, the new custom list is based on 3 criteria: The Customer code, the Product code and the Operation designation.

To this end, first select the type (①) and value (②) of each filter.

The Advanced criteria tab allows to create more refined selections from any data used in your schedule. Your selection can include 10 different data from your base.

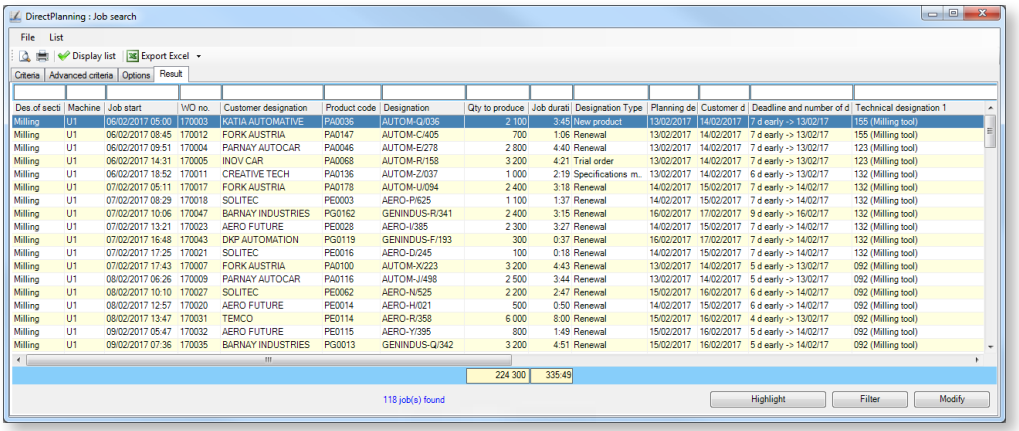
Use the **Options** to define the sorting order as well as the pagination:




◄ The left side of the window allows you define 3 hierarchical sorting criteria.

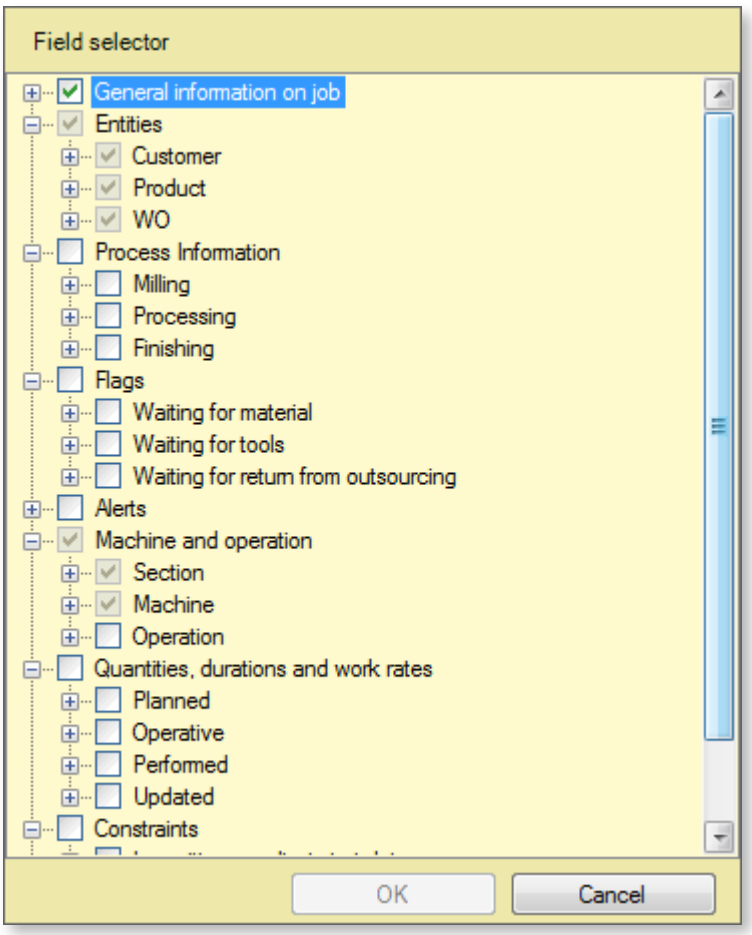
The right side relates only to printing, allowing to define the page break criterion. You can also request a subtotal (by machine here) as well as an overall total, for all data which can be totalled.

Finally, the **Result** tab opens automatically when you click on **Display list**. It displays all jobs matching your search criteria:




Of course, configurable lists can be customised. For instance, you can:

- **Add/Delete columns**: right-click on a column header to display the field selector. Check the fields required in the list and uncheck the others. Keep in mind that quick filters in column headers are not saved.




- **Move columns:** just drag the column to move by clicking on its header and dropping it on its destination. It will position itself to the right of the destination column.

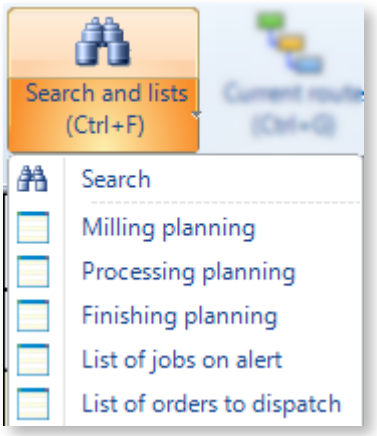
- **Resize columns:** click on the column separator and move the mouse to the left or right.
You can also double-click on the column separator to make the column width automatically fit the con-

tent.

**- Resize window:** resize the window as you would do for any Windows window.

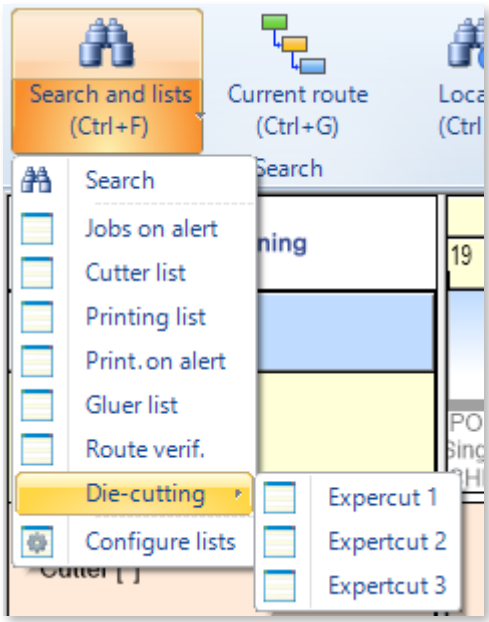
**- Save your list:** save the list by clicking on the floppy disk on the top left corner of the screen.

Under the **Home** > **Search and lists (Ctrl+F)** tab, users may leverage the lists that you created (when authorised in the user configuration).



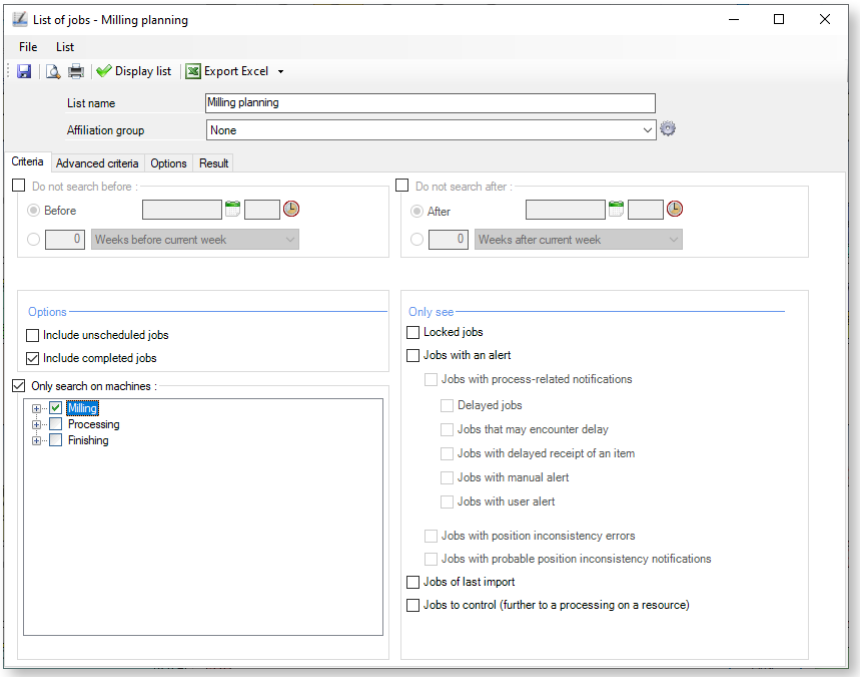

## Groups of configurable lists

To enhance the management of large numbers of configurable lists, you now have to ability to create groups and assign a list to a group. In the display of configurable lists, you will see these groups and the configurable lists they contain::

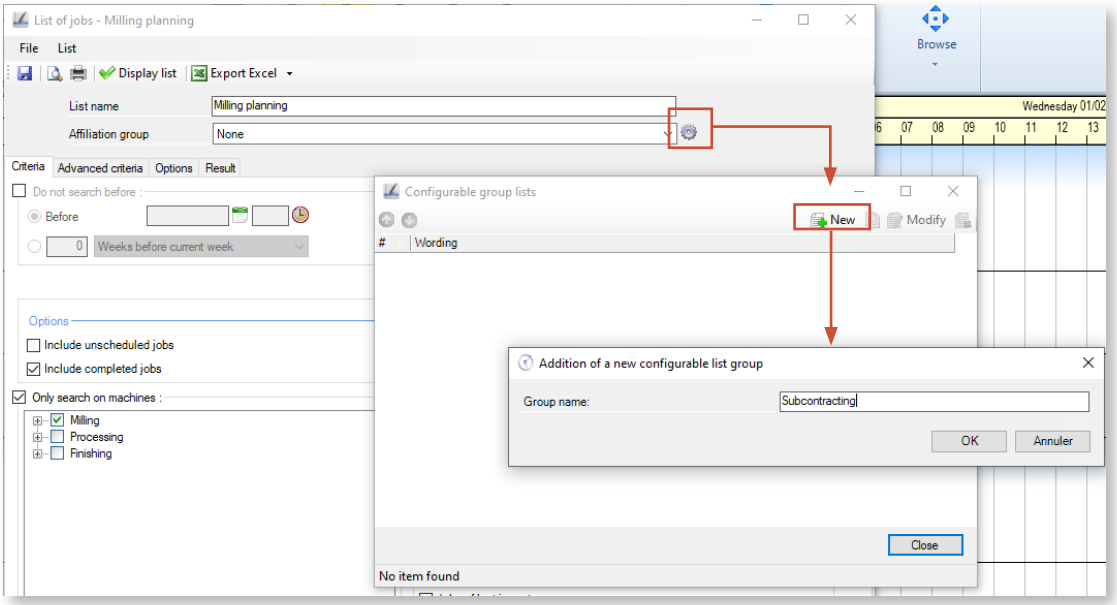



◄ The die-cutting group and the configurable lists it contains

To assign or create groups of configurable lists, click on the **Configure lists** option, and then create or modify a list:




The **Affiliation group** dropdown offers the ability to select among the already created lists, which one to link with the list being created/modified.
If you want to add an affiliation group, click on the gear icon




Validate to add the group to the list of available groups.

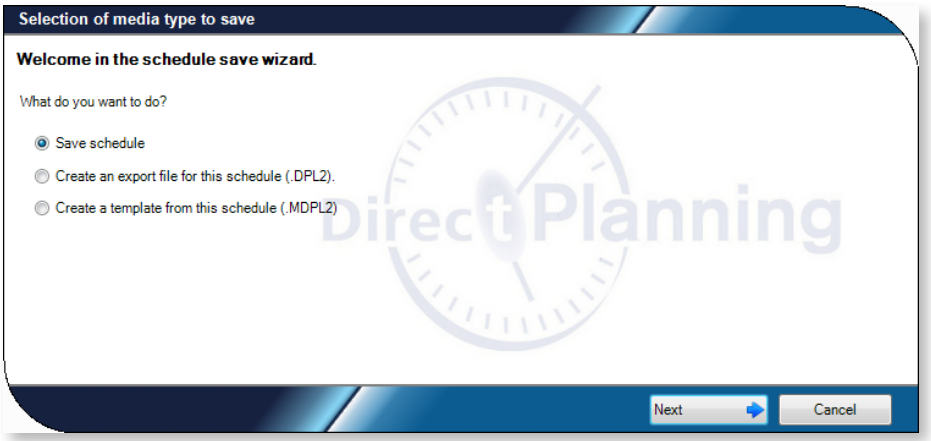
# 4.1.14. Saving the schedule

Different scenarios (detailed below) may occur:

- You are saving a schedule for the first time, a wizard guides you
- You are saving an existing schedule in an export file
- You are saving an existing schedule while also creating a template

## Scenario 1: You are saving a schedule for the first time

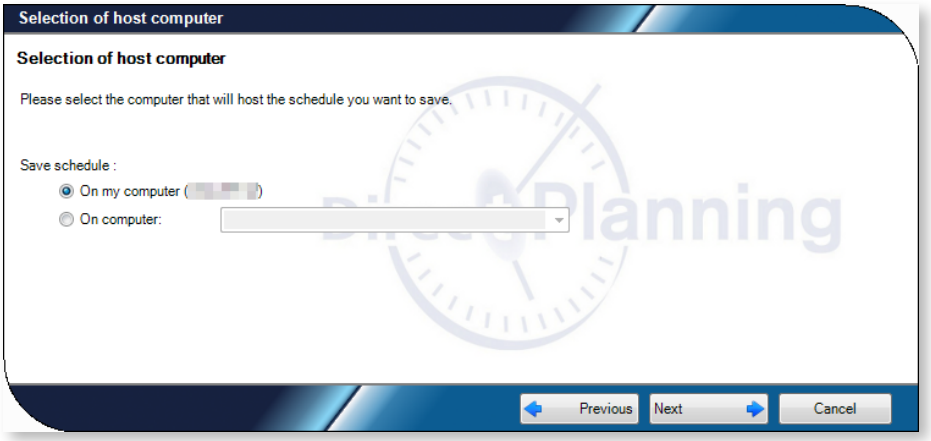
If your planning was just created (that is, if it was never saved), the **Save** and **Save as** commands from the **File** menu open the same wizard:




> **Note**
> As an alternative to the **Save** command in the **File** menu, you can use the traditional Windows shortcuts: The floppy disk (toolbar) and the Ctrl+S key combination.

To save your planning for the first time, select **Save schedule.**

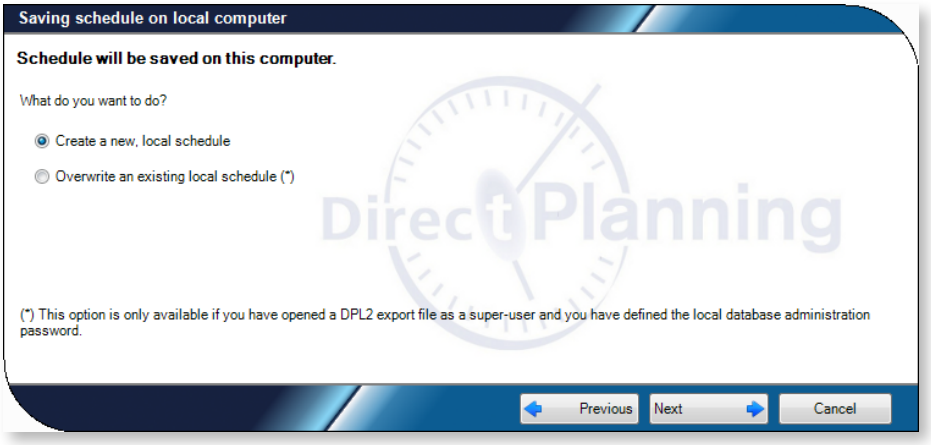
You will then be prompted to select the computer hosting the schedule database:



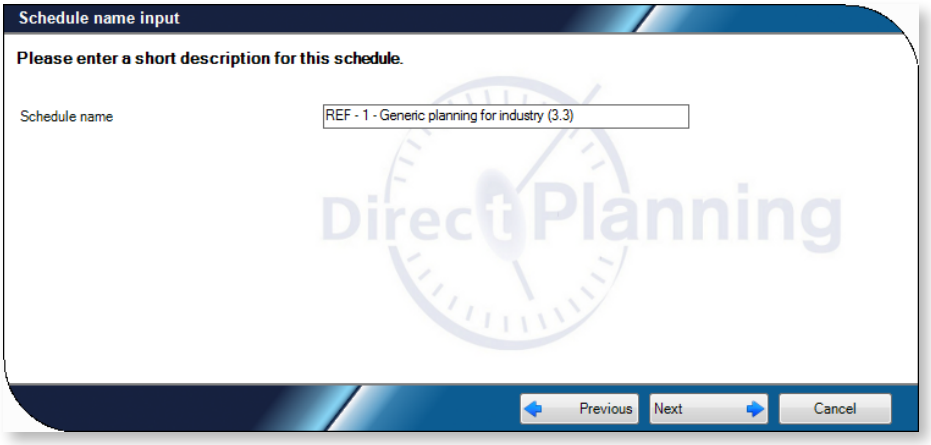
**OUR ADVICE**

There is no right or wrong choice regarding the location of the schedule database. See our section about architectures to know which solution is the most suited to your environment.

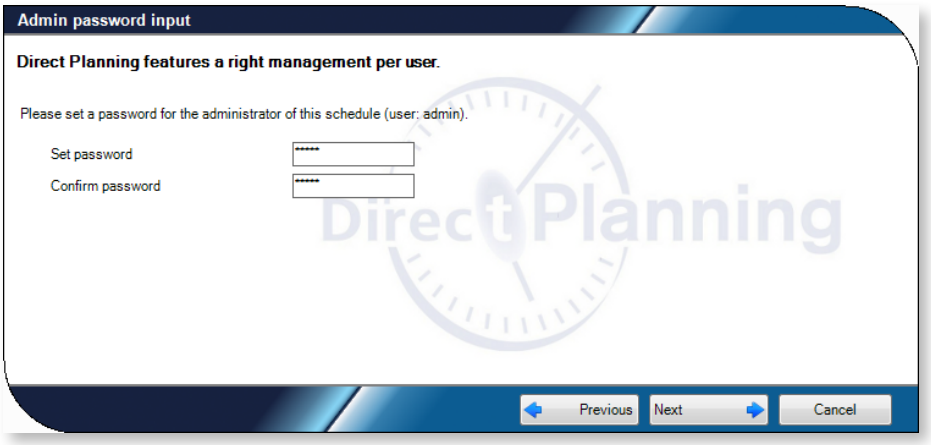
In this example, the schedule database is hosted on the computer in use. Accordingly, **On my computer** is selected. The next window prompts you to create a new local schedule or overwrite an existing local schedule:



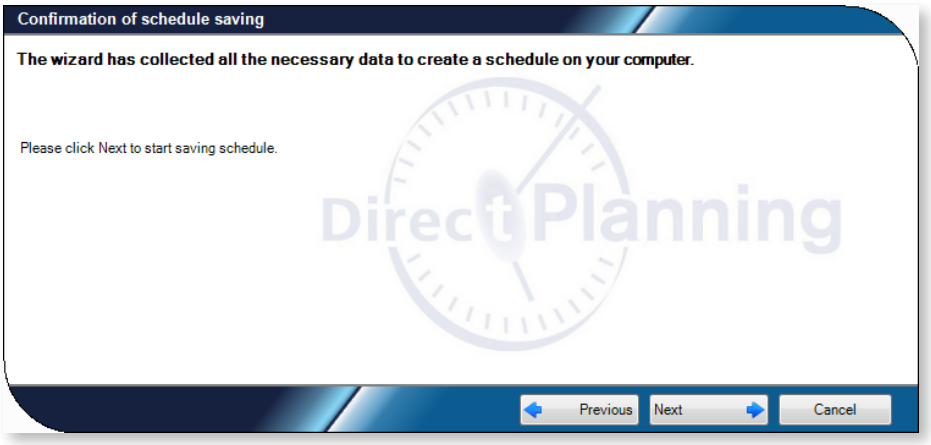

Because the schedule is being created, select **Create a new, local schedule** (only option available, we will discuss the other option when addressing the opening of a DPL2 export file). You are then prompted to name your schedule (by default, it is the name assigned when creating the schedule):




Enter the administrator password again:

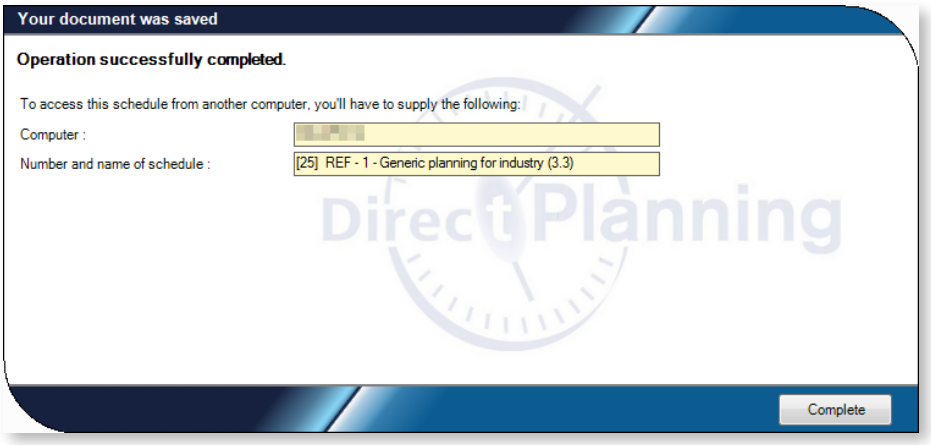



Click on **Next** to confirm and save the schedule:




The local computer network name as well as the schedule identifier display.

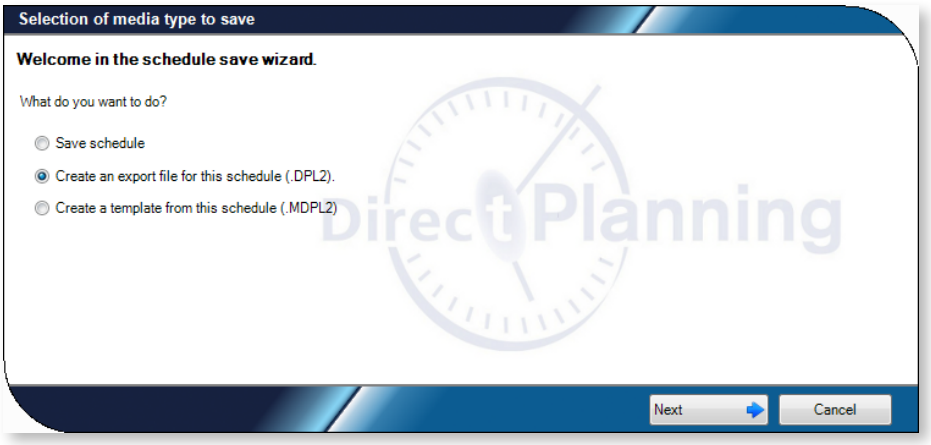
This way, you can provide this information to users who want to access it remotely:



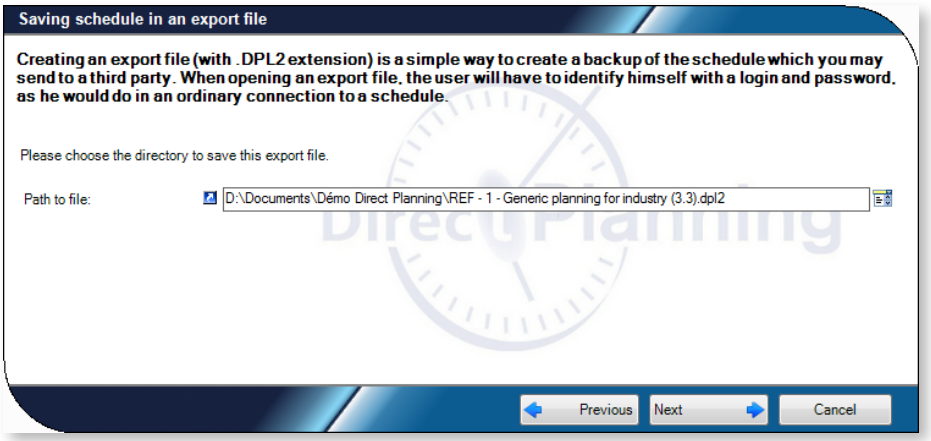
## Scenario 2: Saving an export file

The export file (.dpl2) creation function offers the ability to save the current schedule in a “portable” file, that you can archive or send to a third party. This file bears the “DPL2” extension.

To create an export file, click on **File** > **Save as**
Then select Create an export file for this schedule (.DPL2).




Click on to specify the path and name of the export file.
By default, the path is the one from the last export and the file is named after the schedule.
The button is used to display the folder contents:




The indications provided at the previous step are reminded for information.

The export is complete.

## Scenario 3: Creating a schedule template

Creating a schedule template offers the opportunity to create other schedules based on this template. Schedule templates are similar to the templates available in your word processing software.

Saving a template from an opened schedule also saves certain data, including:

- The whole configuration (the administrator is the only user kept)
- Resources and resource families (Project and Service modes)
- Sections, machines and technical data (Industry mode)
- Calendars (all modes)

Each schedule template is saved in a MDPL2 file.
It is a "portable" file which can easily be copied, sent, etc.

**Note**
Users, entities and jobs are not saved in templates.

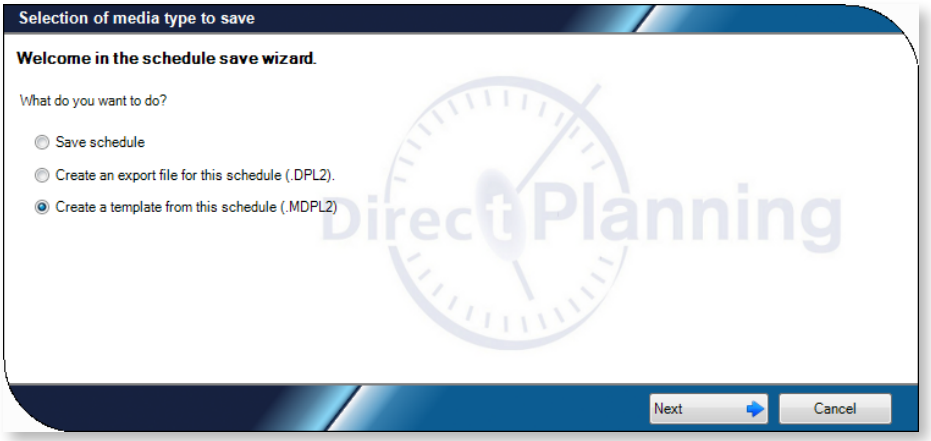
**OUR ADVICE**

If you still wish to keep certain data in your model, there is an alternative: Instead of using a model, save your schedule under a different name. In the new schedule, delete everything that you do not want to keep (users, jobs, ...).

Follow these steps to create a schedule template:

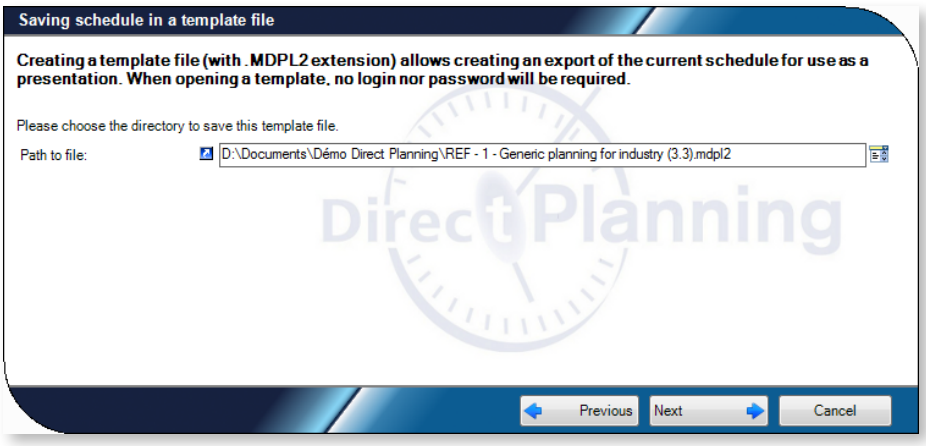
To create an export file, click on **File** > **Save as**

Then select **Create a template from this schedule (.MDPL2)**




Click on to specify the path and name of the export file.

By default, the path is the one from the last export and the file is named after the schedule.
The button is used to display the folder contents:




The indications provided at the previous step are reminded for information.

The template is now saved.

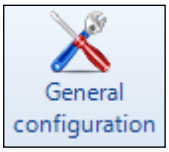
# 5. Scheduling with Direct Planning

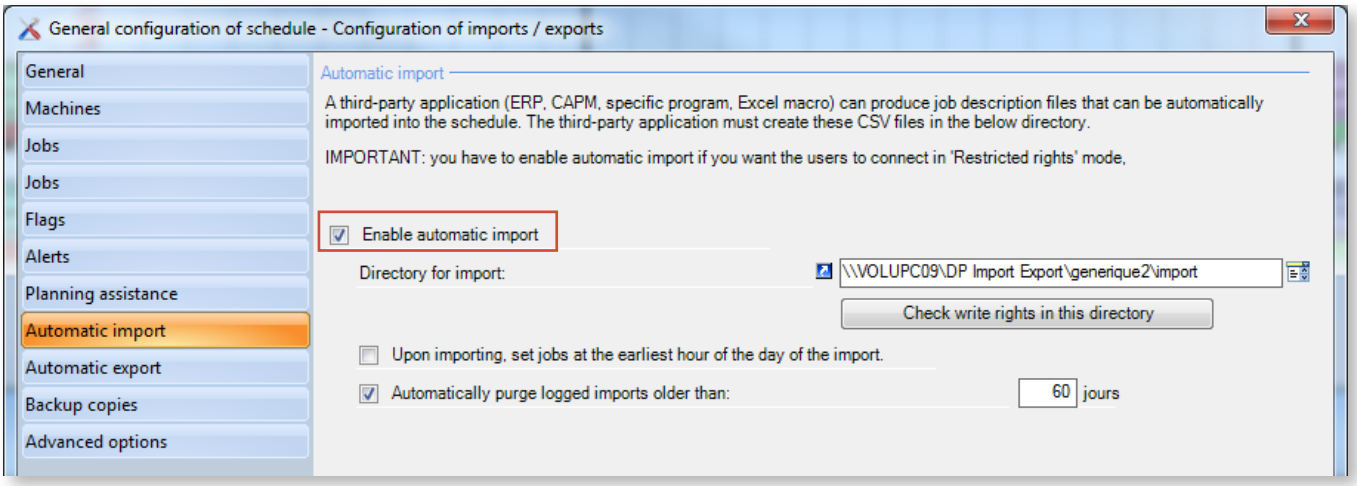
## 5.1. Scheduling via an interface with an ERP

In order to avoid entering the same information over and over again, Direct Planning can automatically import data originating from your information system (ERP, CAPE, Excel®, ...) if they comply with the expected CSV format.
This way, technical elements, entities (orders, customers, etc.), jobs and links can be created automatically in the schedule.

### ADMINISTRATION

This automatic import function is activated in the **General configuration** of Direct Planning, under the **Configuration** tab:




When you activate the automatic import, you choose the folder containing your CSV import files.

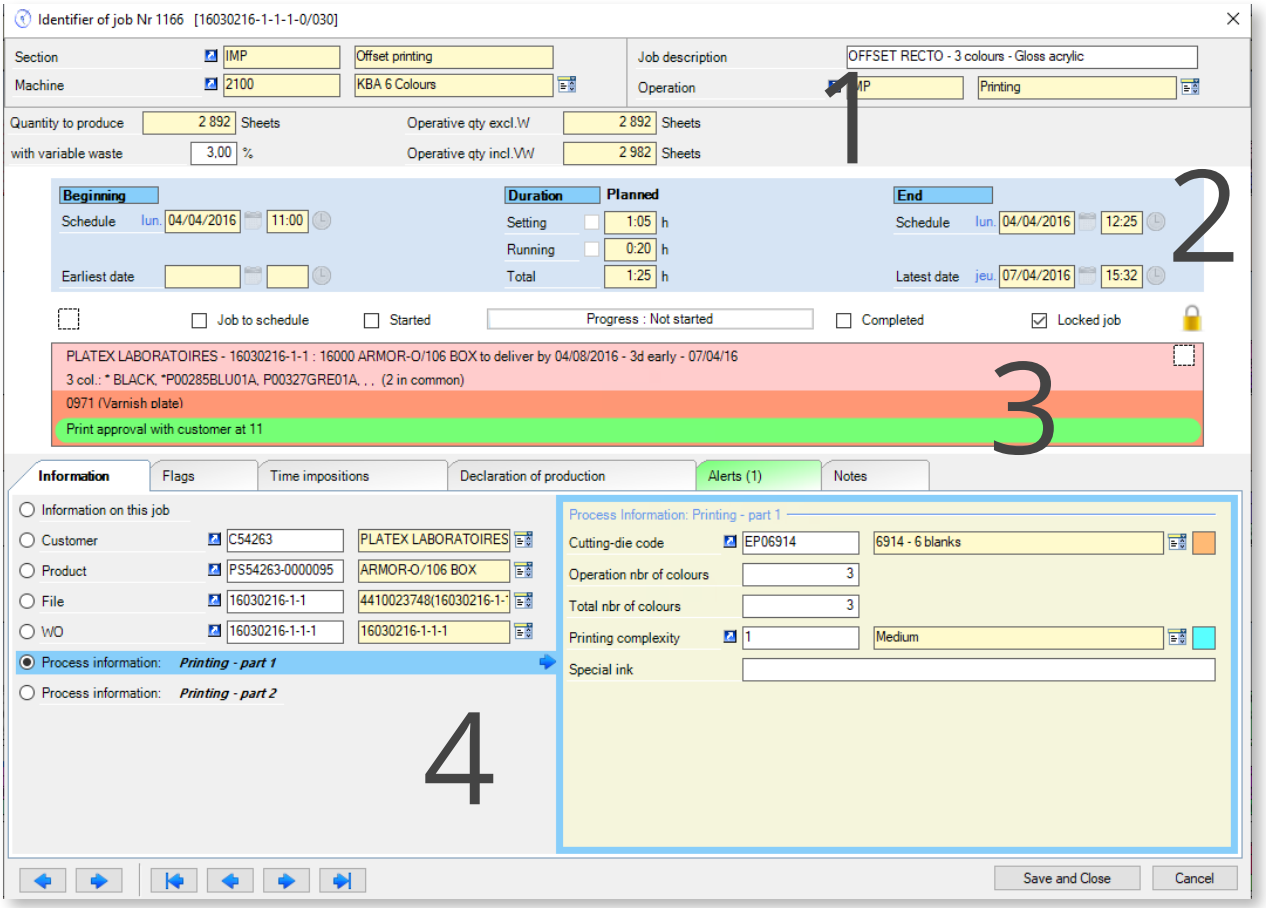
More information about the interfacing features included in Direct Planning in section 6, *Interfacing your ERP with Direct Planning*.

# 5.2. Creating jobs manually

2 different methods can be used to create jobs manually:

1. In the Edit menu, click on Create a job
2. Place the cursor on a free area of the schedule, on the same line as the machine which will run the job. Right-click to open the context menu.
   Select Create a job...

Both methods open the job details screen, except that the second pre-populates the Section and Machine fields with those on which you right-clicked.

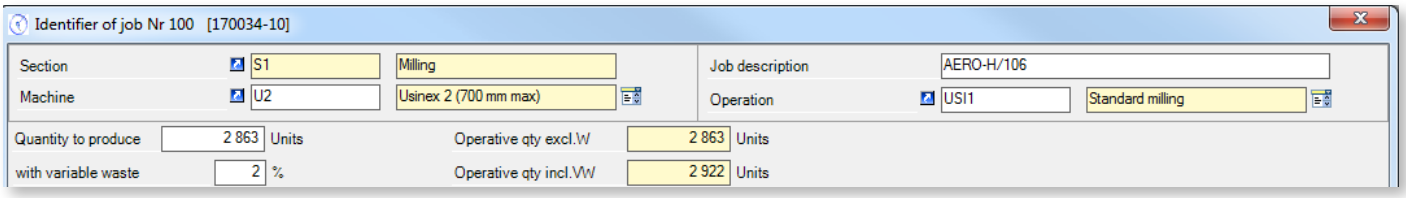



The job details window can be divided in 3 panes:

1. General information on job
2. Date and duration information
3. Scheduled ticket
4. Other information depending on the selected tab

While the first, second and third panes are always displayed, the contents of the fourth depend on the selected tab. These panes are further explained in the following chapters.

# 5.2.1. Job header information

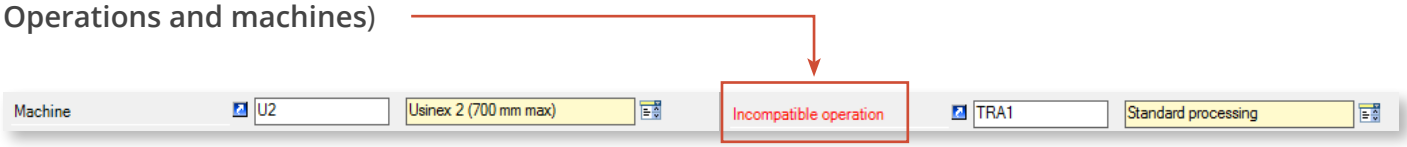



Job identifier: The window header shows the identifier of job No. x. It is a sequence number which is automatically assigned by Direct Planning. It cannot be modified.

Below, the machine performing the job is selected via the button (this zone is pre-populated if your job is created via the context menu in the schedule). The machine section is automatically entered. Note that clicking on the button next to the machine code opens the corresponding machine.

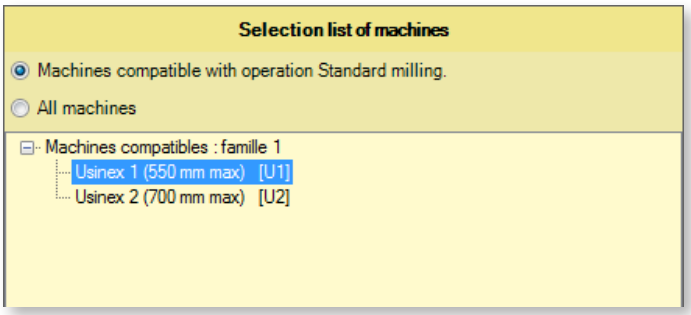
Optionally, a job description can then be entered, providing a quick way to identify jobs when the configuration of display modes is set to show this description.

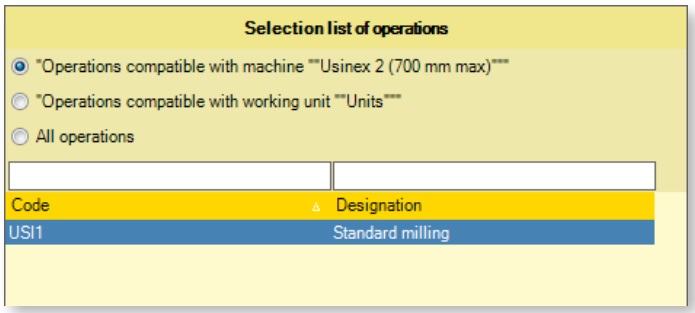
The selected operation is the one attached by default to your machine (if any). At this stage, Direct Planning can check the compatibility between machines and operations (as defined under **Data** > **Operations and machines**)



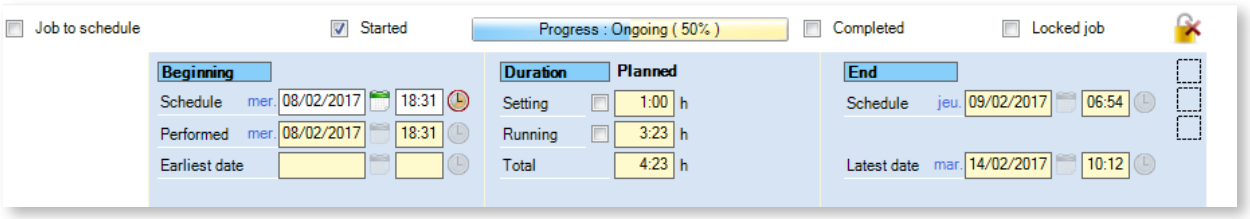

Then, enter the produced and wasted quantities (retrieved by default on the machine record), which automatically populates operative quantities excluding waste and including variable waste.

When a machine is selected, it is possible to display only compatible operations (and vice versa) by clicking on :



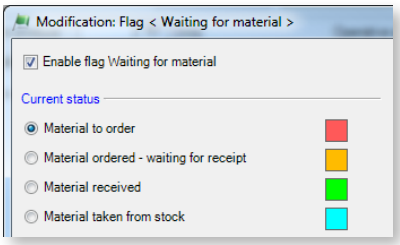



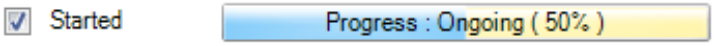
# 5.2.2. Sundry information, dates and durations




Use the top check boxes to answer different questions about the job:

- Is the job scheduled or to schedule?
- Is the job subject to a flag?
  If so, clicking on the ⬚ icon opens the window for choosing the flag to display:

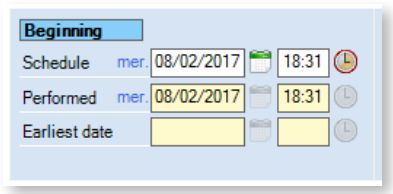



- Is the job started? If so, you can click in the progress bar to modify its progress:
  
  
- Is the job completed?
- Is the job locked? (job cannot be moved, modified or deleted by users)

**OUR ADVICE**

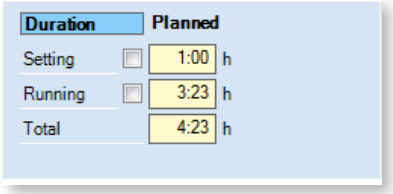
Use locked jobs only when they really make sense (for example if a visit of your shop floor is planned with a customer). Indeed, the propagation of locked jobs may adversely impact your schedule by limiting your ability to move jobs.

The next zones, in the blue box, affect the actual (temporal) scheduling of your job.
As reflected by these 3 columns, jobs are divided in 3 phases: start, duration and end.




**Planning**: date and time chosen for the start of the job in the schedule.

**Earliest**: earliest start date and time (not editable in this screen, see *Time constraints* in the next section).




This data reflects the setting and running durations calculated by Direct Planning.
In our example, this data displays on a yellow background (not editable fields) because we checked the **Enable automatic calculation of durations for this machine** on the machine record.

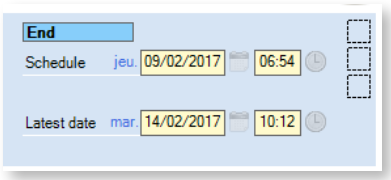
If you did not check this box, you can enter durations in these fields.

Even if you activated the automated calculation of durations by Direct Planning, you can force durations by checking the corresponding box.

**REMINDER**

The automated calculation of durations is retrieved, from the most general to the most precise:

1. Simple mode: on the **machine record**
2. Intermediary mode: on the **Operations/Machines pair**
3. Expert mode: on **programmable formulas**

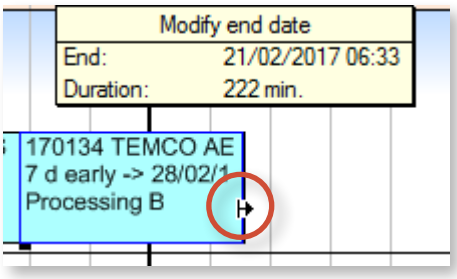



**Planning**: date and time automatically calculated depending on the job start and duration.
Modifying this value is like forcing the running duration of the job

**Latest**: latest start date and time (not modifiable in this screen, see *Time constraints* paragraph in the next section).

## Resizing a job with the mouse

The end time can be modified directly in the schedule, when the job is not selected. To do so, place your mouse cursor on the right edge of the job. The cursor turns into an arrow:

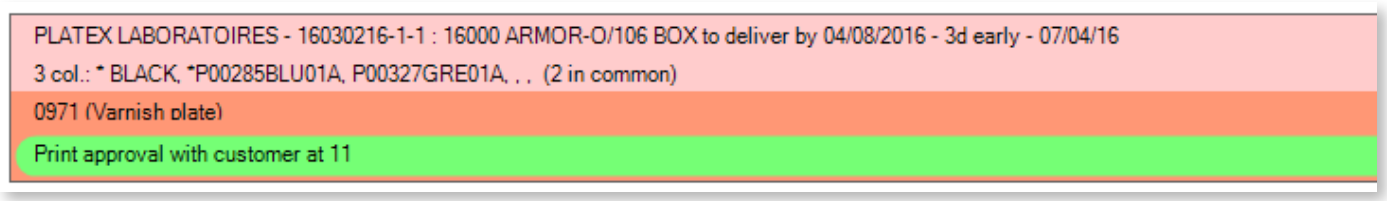



◄ When you move the cursor, the job end time and duration refresh dynamically in this informative box.

This action is like forcing the job running duration.

## 5.2.3. Scheduled ticket

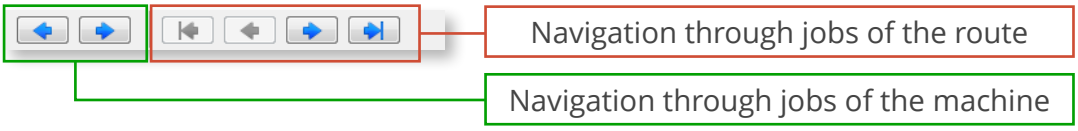
The center part of the job details screen displays a "strip" which allows you to display the same information, colours and alerts as those displayed on schedule. The various alerts display at the bottom of the ticket in order not to hide any information:



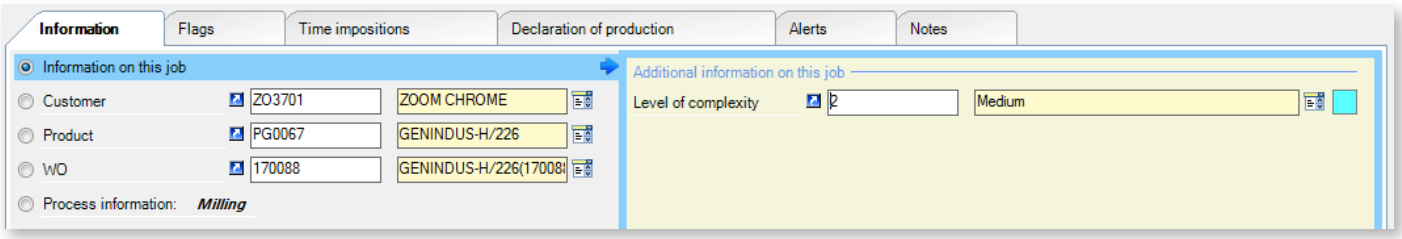

This way, when you configure programmable formulas to display custom colours and information on the schedule, you can still benefit from them in the job details screen.

# 5.2.4. Other information on the job

The arrows located at the bottom of the window allow to navigate through jobs via the same screen:

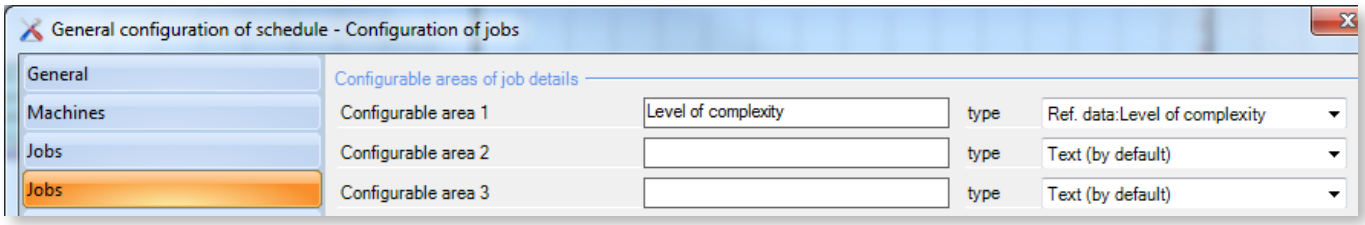



The information displayed below rely heavily on the configuration of your schedule. We are going to focus on each of the available tabs.

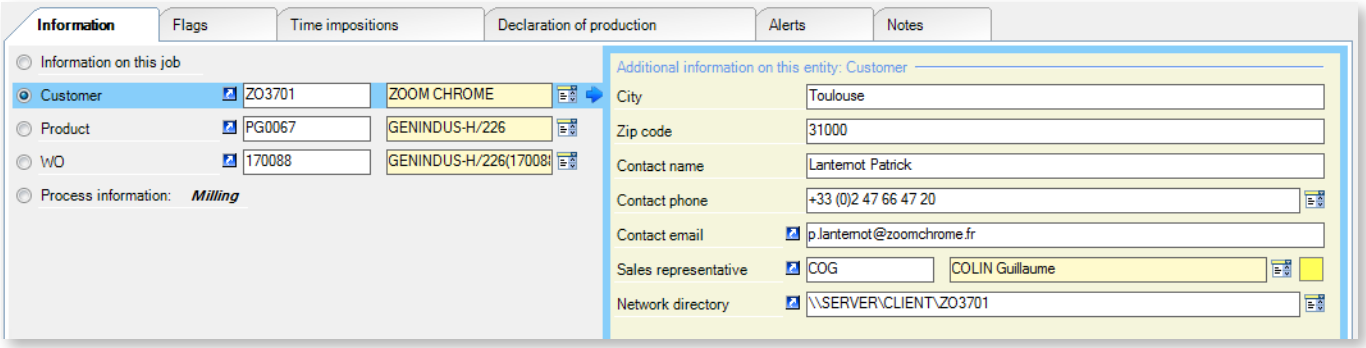



## Information

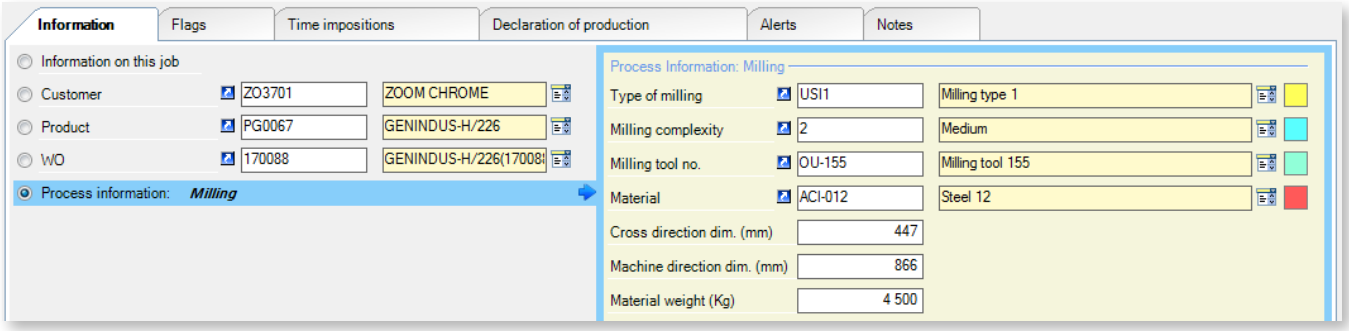
- **Information on this job**: when you check this box, the right side shows the fields corresponding to the configurable areas set by the administrator at the job level (**Configuration** > **General configuration** > **Jobs: configurable areas).**
  For the example above:




- The following lines display the entities generated during the schedule creation. Click on to select an entity and on to modify it (where appropriate).
  When an entity is selected, the right pane displays additional information entered by the administrator for this entity (**Configuration** > **Entities**):

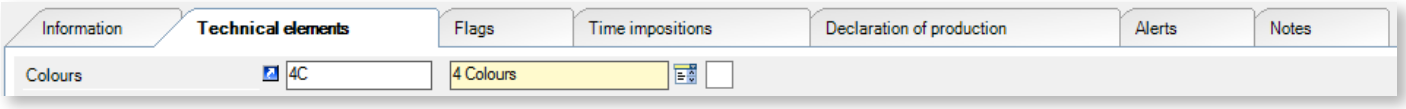


- Finally, the **Informations process** box allows to display information that are specific to the job being created (**Configuration** > **Process Information**). In our example, the process information type of milling, milling complexity or milling tool no. are only relevant for the Printing operation:




## Technical elements

The **Technical elements** tab displays only if the administrator created these elements (**Configuration** > **Technical elements**). As a reminder, technical elements are additional characteristics of your machines. In the corrugated cardboard sector, these may be the number of colours, the type of corrugation or the type of bonding:

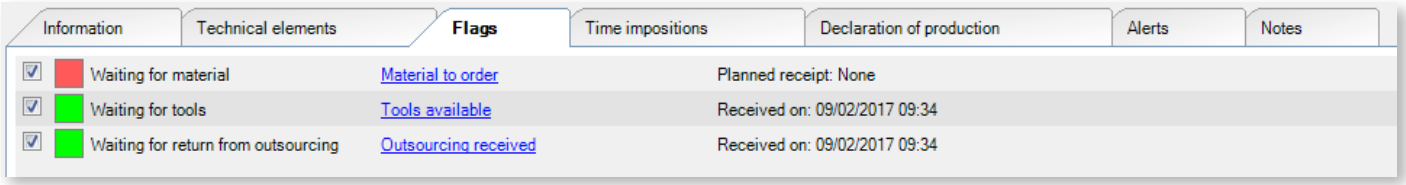



### REMINDER

- The administrator configures the technical elements depending on the users needs
- Users populate technical elements (**Data** > **Technical elements**)
- Applicable technical elements can be specified in the machine record
- Technical elements may impact setting time and work rate (**Data** > **Operations and machines**)

## Flags

As with technical elements, the **Flags** tab displays only if flags are set.



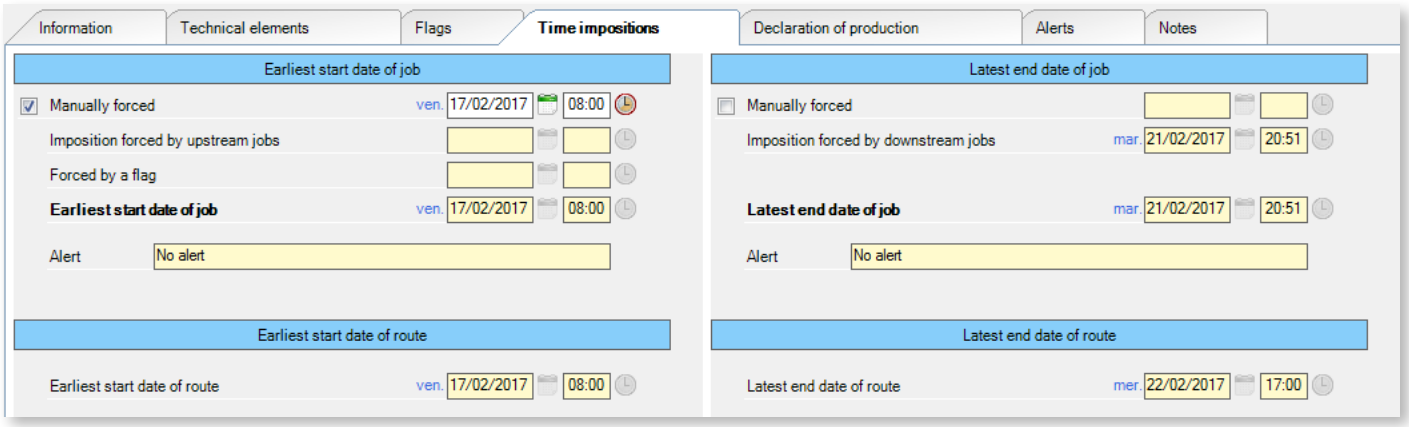

Usable flags are displayed under this tab. To enable/disable a flag, check the corresponding box or click directly on it.

## Time constraints

This tab lists all time constraints which can affect a job.
Constraints can:

- Be forced manually by you;
- Result from a route (sequence of jobs in a given order);
- Be forced by a flag (receipt of an element required to start a job).

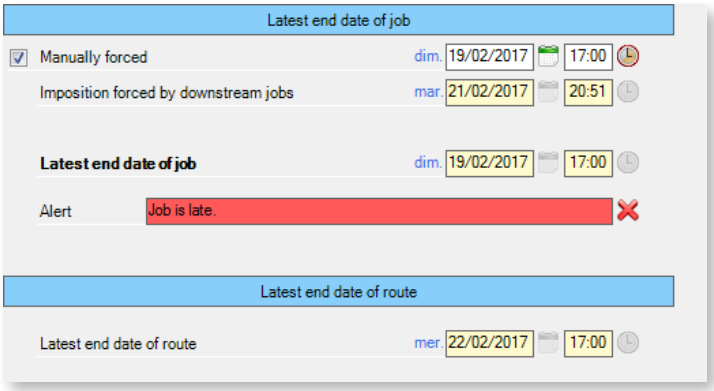
You can only enter the dates that you wish to force.
The other dates are displayed as a reminder (on a yellow background) but cannot be modified.




The screen is divided in 2 parts: **earliest start**, **latest end** (for job/route).
Each part indicates the constraints at the job level and at the route level.

## Latest end: dates and times forced manually

Production imperatives may require you to force manually the latest end date.
Use this screen to force a date which will be automatically respected if planning assistance is active. The latest end date must be forced on the last job of the route (positioned by the ERP interface).




◄ Check the corresponding box and enter a date directly or use the date and time entry tools.

If the latest end date that you force is more restrictive than the current date, an alert warns you that the job is now overdue.

## Latest end: constraint forced by downstream jobs

If the job belongs to a route, Direct Planning automatically calculates the latest end date (forced by downstream jobs).
This date, calculated by Direct Planning, is reminded here but cannot be modified.

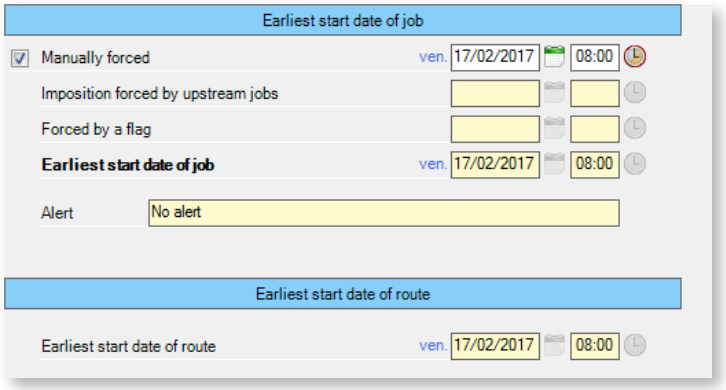
From the latest end date forced manually and by downstream jobs, Direct Planning picks the most restrictive and displays it in the bold field **Latest end date of job**.

◄ In the example, the manual constraint (typically to honour a customer order in time or free a machine) is more restrictive than the constraint imposed by the downstream jobs.

Logically, this more restrictive date is chosen as **Latest end date of job**.

## Earliest start: date and time forced manually

Production imperatives may require you to force manually an earliest start date.
Use this screen to force a date which will be automatically respected if planning assistance is active.




◄ Check the corresponding box and enter a date directly or use the date and time entry tools.

When you force an earliest start date, the job start date adjusts in order to respect this constraint.
Besides, if this constraint applies in the future, saving it automatically moves the job to that date without moving jobs located to its right, thus avoiding gaps in the schedule.

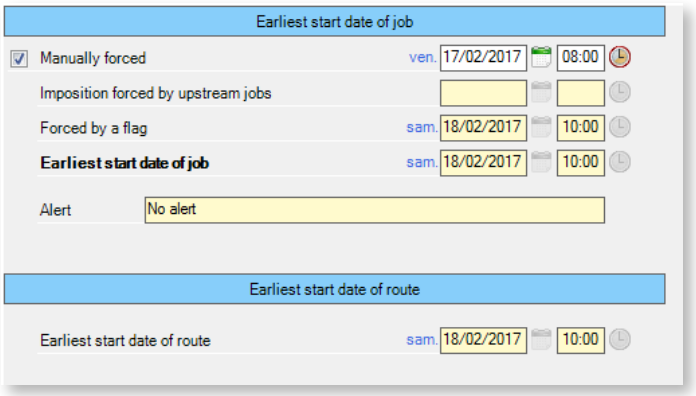
## Earliest start: constraint forced by upstream jobs

If the job belongs to a route, Direct Planning automatically calculates the earliest start date (forced by upstream jobs).
This date, calculated by Direct Planning, is reminded here but cannot be modified.

## Earliest start: constraint forced by a flag

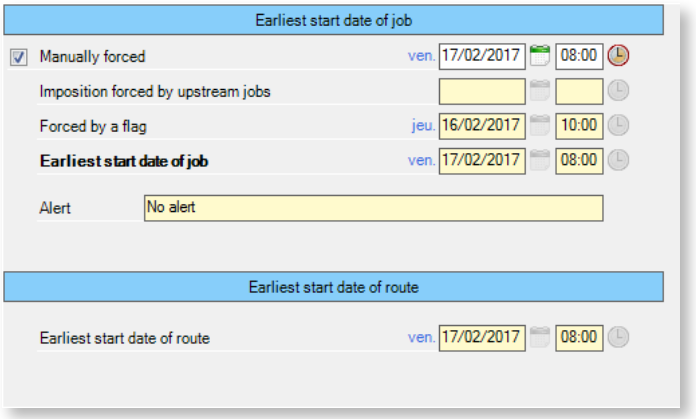
The multi-status, awaiting item receipt flags are used to indicate the status of an element to order, ordered or received. As long as the element is not received, its receipt date represents a constraint which is reminded here.

From these 3 constraints (forced manually, by upstream jobs and by flags), Direct Planning picks the most restrictive (i.e. the latest) and displays it in the bold field **Earliest start date of job**.




◄ In this example, the start date of job is forced on February 17.
However, a tool receipt waiting flag indicates that this job cannot start before the next day.

This last constraint being more restrictive, it is chosen by Direct Planning as **Earliest start date of job**.




◄ Conversely, keeping this tool receipt constraint on May 16 adds a more restrictive forced earliest start date, set the next day.

Notice that the manually forced constraint being more restrictive, it is chosen Direct Planning as **Earliest start date of job**.

The **Alert** field displays a warning if the job is placed before its earliest start date:

This alert can only be encountered when planning assistance is not active. Indeed, it ensures the automatic respect of the restrictive constraints posed by the earliest start dates.

## Route constraints

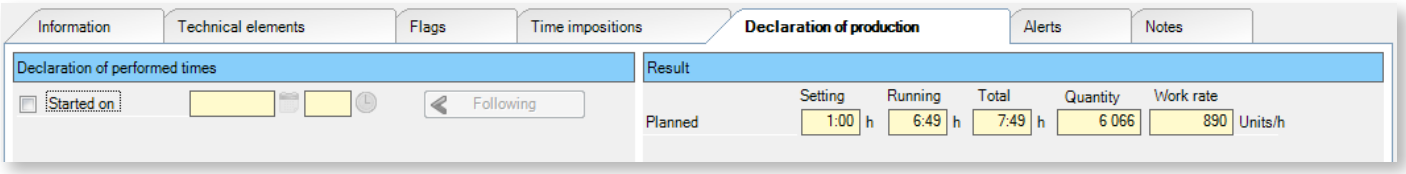
In the lower part, the fields dedicated to the earliest start date and latest end date of the route are displayed for information, they cannot be modified.
The earliest start date of the route always refers to the earliest start date of the first job of the route.
Inversely, the latest end date of the route always refers to the latest end date of the last job of the route.

## Declaration of production

Production can be monitored at various levels:

| | |
|---|---|
| Level 1 | Monitoring of started and completed jobs only.<br>Via right-click on a job: **Progress status** > **Start/Complete jobs.** |
| Level 2 | Level 1 + Indication of the production actual start date.<br>Accordingly, the job will be moved to reflect reality on the ground. |
| Level 3 | Level 2 + Input of produced quantities. |
| Level 4 | Level 3 + Input of production times.<br>Useful when discrepancies may appear between expected and performed values, which is notably the case for very long jobs. |

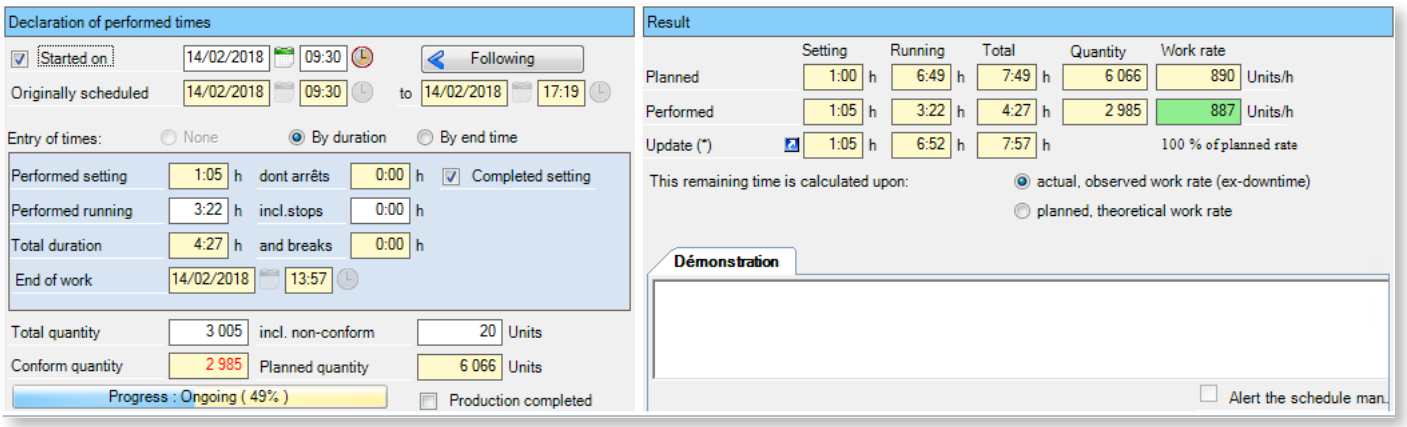
The screen capture above shows the **Declaration of production** tab for a job not started: the right side of the screen (**Result**) only shows the expected values.




### Our advice

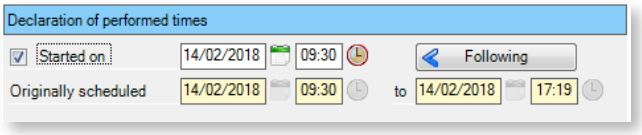
This screen relies heavily on the working unit of quantity to produce, so make sure that this value is properly configured under the **Technical data** section of the machine record.

To start the declaration of production, click on **Started on**:

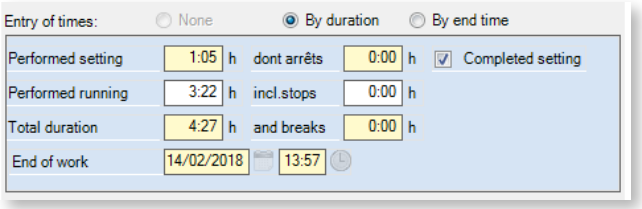


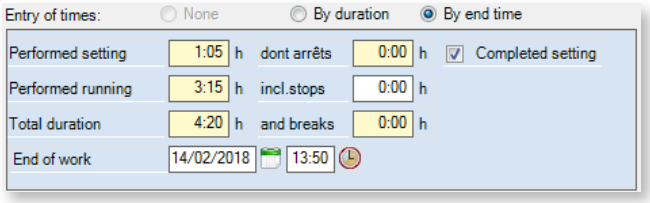

This screen is made of two big panes: **Declaration of production times and quantity** and **Result**.

Let's see in details the contents of each pane.




Here, you simply declare that the job is started, at a certain date and time. For the start date and time, the system offers the date and time initially scheduled. You can change them if needed. Click on **Following** to place the job right after the end of the last started job of the day.




This box only displays if you activate the entry of times. You can enter times by durations (with automated calculation of the end time, above left) or by end time (with automated calculation of durations, above right).

### Setting

When you modify the duration of the performed setting, Direct Planning refreshes the total updated duration of the job in the right pane (**Result**).

- As long as performed values are below or equal to expected values, and setting is not complete, the updated setting is capped at the expected values.
  Indicating that setting is finished aligns the updated setting with performed values.
- As soon as performed values exceed the expectations, the updated setting aligns with performed values, whether or not the setting is completed.

### Running (entry of times by duration)

When you modify the performed running duration, Direct Planning:

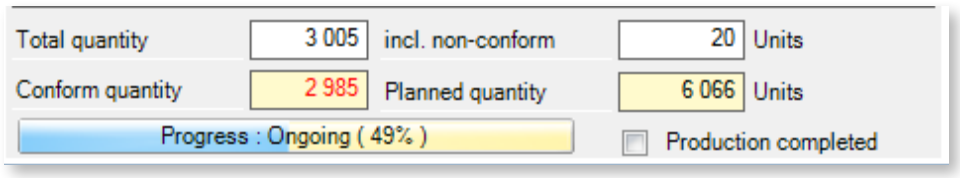
- Recalculates the performed work rate in the right pane (Result);
- Refreshes the total updated duration in the right pane (Result) depending on the method chosen for calculating the remaining duration.

### Downtimes

You can indicate machine downtimes, whatever the cause.
These will be subtracted from updated setting and running times.

End of work (entry of times by end time)

Specify the running end date and time. Direct Planning automatically determines the performed running time, taking into account the performed setting time and the downtimes.




This last zone focuses on the produced quantity.
If the working unit of quantity to produce is entered on the machine, you can already declare the total produced quantity and, if applicable, the non-compliant quantity. Direct Planning then deduces the compliant quantity and the progress.

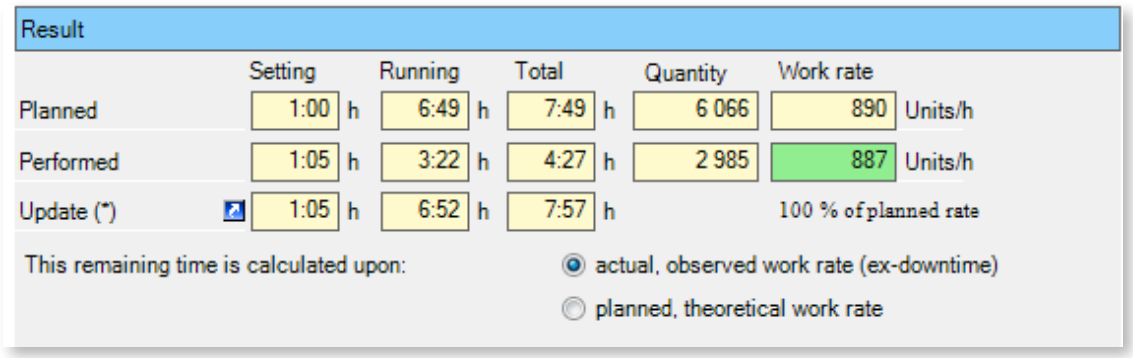
**OUR ADVICE**

When creating jobs, leave this zone empty: the performed quantity will be specified later, when modifying jobs.

The performed quantity can exceed the quantity to produce, in which case the progress percentage reaches 100%. As an alternative to manual input, you can click in the progress bar to set the performed percentage. Direct Planning will refresh quantities.
This alternative is the only possibility offered when there is no working unit defined on the machine.

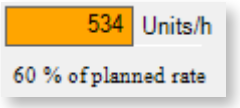
If the job is complete, check the **Production completed** box. The progress status automatically reaches 100%. Finished jobs are greyed out in the schedule.

You can declare the production as completed even if the produced quantity differs from the expected quantity.

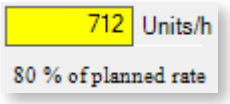



The upper part of the **Result** pane displays a number of indicators related to production, displayed as a reminder but not modifiable. These indicators are refreshed when modifying production parameters.

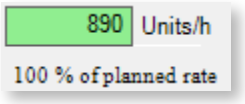
Notice that the calculation of the remaining duration can use the theoretical work rate configured by default or the actual work rate calculated for the ongoing production, whose background colour reflects discrepancies between with the expected and performed work rates:



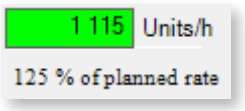

◄ Performed work rate ≤ 60 %: weak performance.



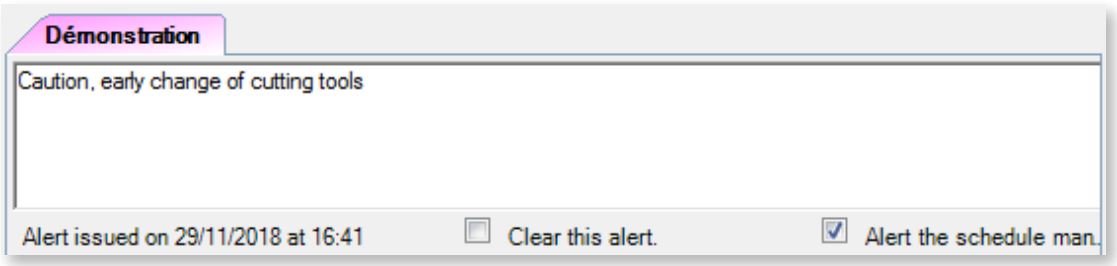

◄ Performed work rate ≤ 80 %: improvable performance.




◄ Performed work rate ≤ 120 %: good performance.

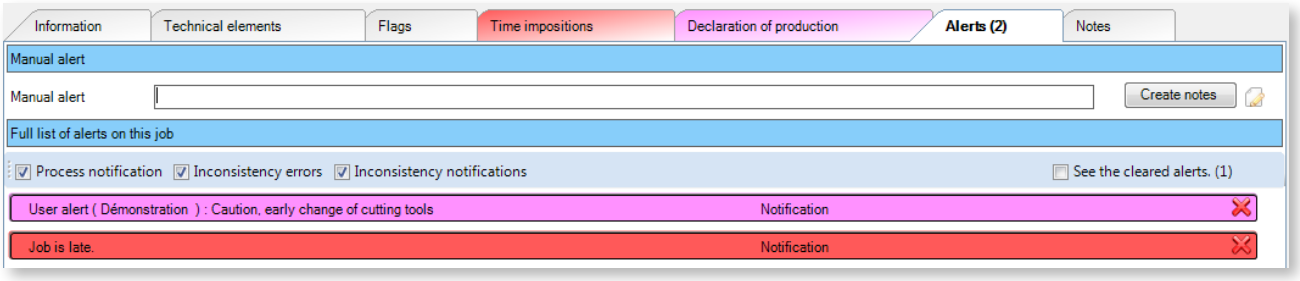



◄ Performed work rate > 120 %: excellent performance.




This zone allows the operator to notice the planning manager of an alert regarding a production issue. Checking the **Alert the schedule manager** box allows the creation of an alert for all to see, including the planning manager. This alert obeys the same rules as the other alerts.

## Alerts

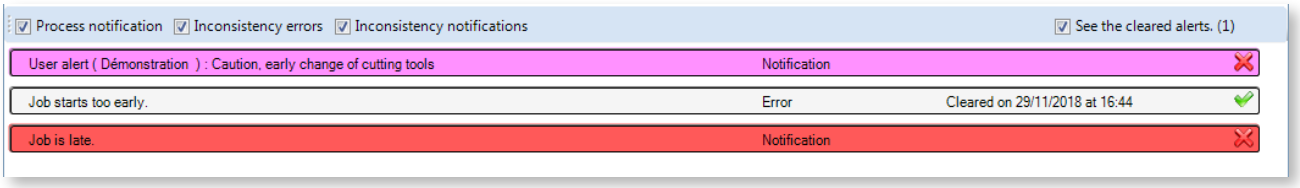



The screen capture above shows a job with 2 alerts:

- A user-created manual alert (in purple)
- An system-generated automatic alert (in red)

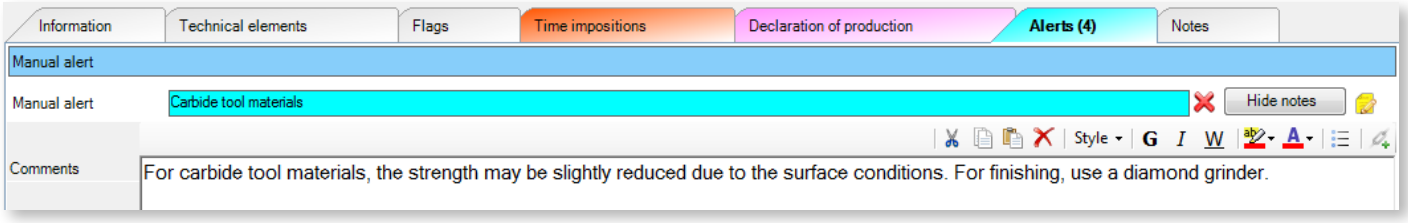
The alert counter on a job is displayed in the tab title.

To clear an alert, click the cross displayed on the right. Cleared alerts (if any) can be displayed by clicking on the corresponding box. Cleared alerts are added to the list of alerts, in white. You find the date and time they were cleared, as well as a check mark:

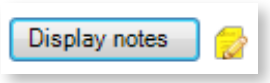



Click on the check mark to cancel the alert clearance:

Manual alerts can be enriched with notes by clicking on **Create notes**, which opens the following window:



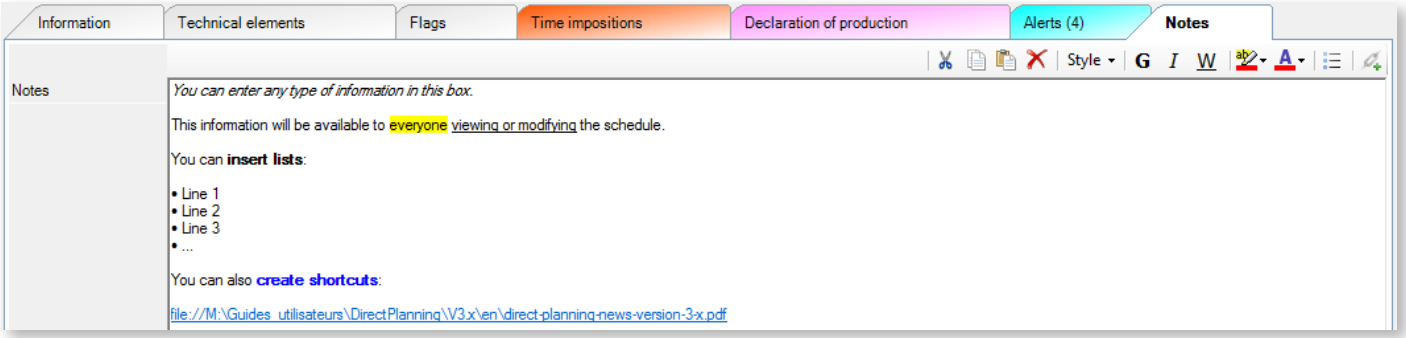

When notes have been set to complement the alert, the **Create notes** button turns into **Display notes** and the corresponding icon turns yellow:




See section 5.10, *Alerts*, for more information about alerts.

Notes

This last tab is used to enter notes on a job. When notes have been entered, the tab turns yellow to catch your attention in the job details.

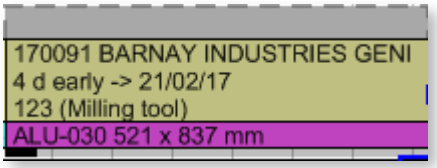


# 5.3. Manipulating jobs

Manipulating jobs covers multiple aspects which will be described in the following subsections.

## 5.3.1. Selecting jobs

All you have to do is click on a job to select it.
The selected job then shows against a dark grey background similar to the following example:

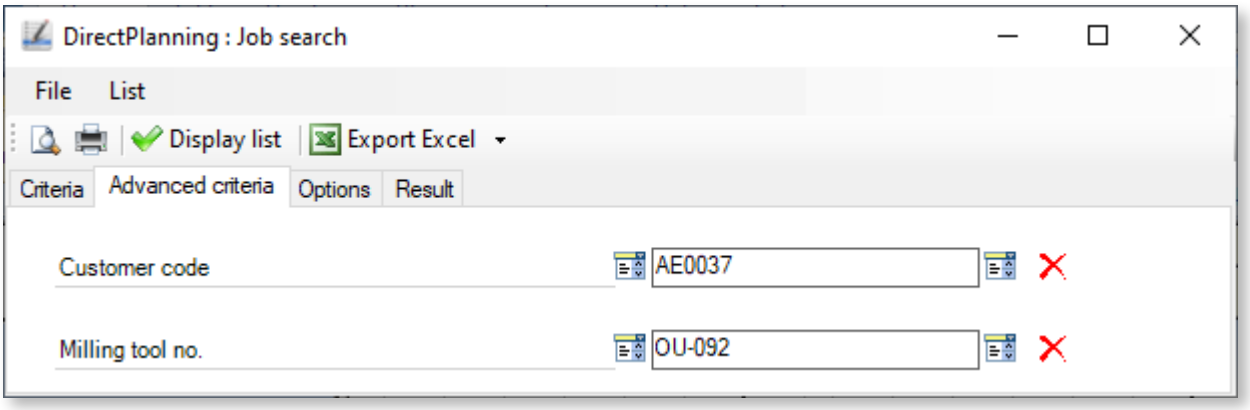



Various methods allow the selection of multiple jobs:

- Using the mouse, draw a rectangle over the jobs to include in your selection. All jobs included (even partially) in this rectangle will be selected.
- Hold the **Ctrl** key while clicking on the appropriate jobs.
- To select a range of jobs, click on the first and last jobs of the range while holding the **Shift** key.
- Right-click on a job and select **Widen selection** to select multiple jobs sharing characteristics (same route, same entity, same machine after the current job).

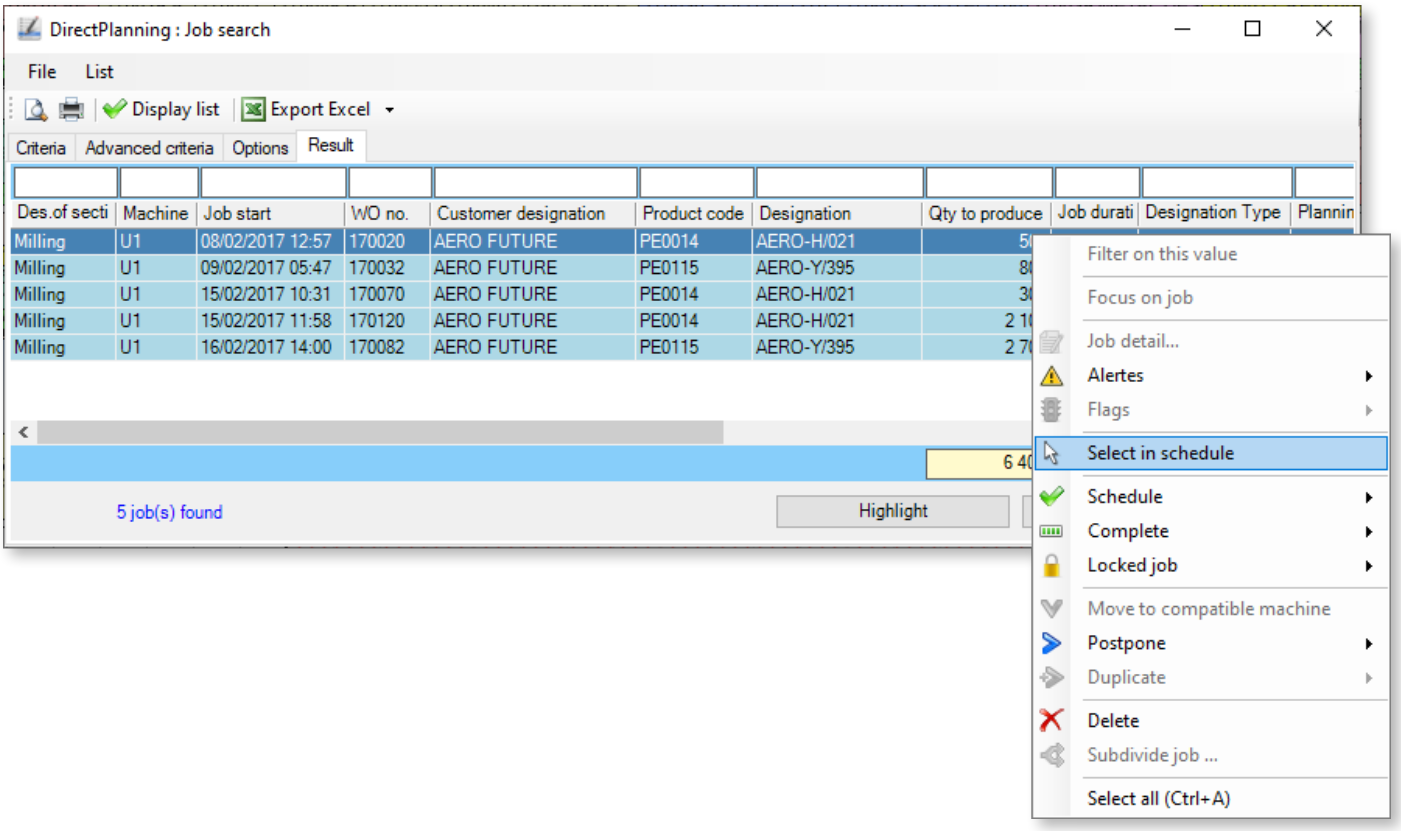
Selecting specific jobs

The job filtering features (**Search**, **Locator** and **Current route** functions) allow you to select in the schedule jobs matching your criteria. All there is to do is select them in the list and click **Select in schedule**.
For example, I would like to select in the schedule all jobs matching the customer AERO FUTURE (customer code AE0037) and using the milling tool OU-92.




In this window, I am using the search function to get the list of all jobs matching these criteria.

In the result window, all that is left to do is click **Select in schedule.**




Then I can perform all the actions available for groups of jobs (e.g. **cluster jobs of selection**).

To cancel a selection, select another job or click on a free area of the schedule, or start any other action such as for instance selecting an element in a menu.

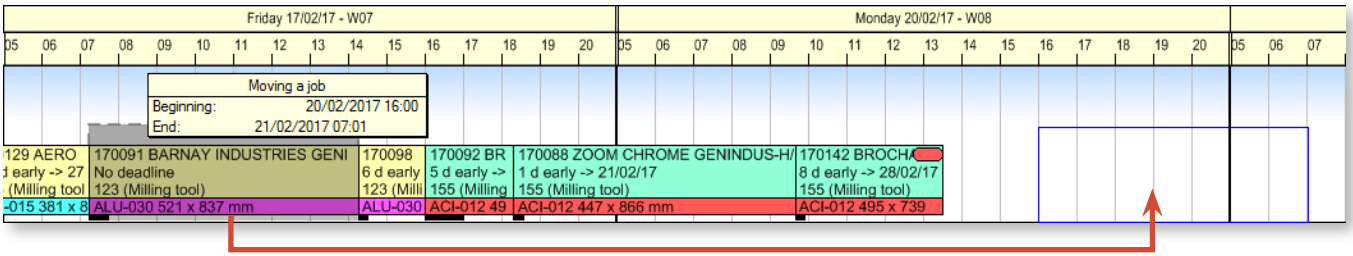
## 5.3.2. Moving jobs

Unless locked, you can move any job in the schedule.
One of Direct Planning's strengths lies in the intuitive scheduling management it offers.
The drag-and-drop method reflects this ease of use.

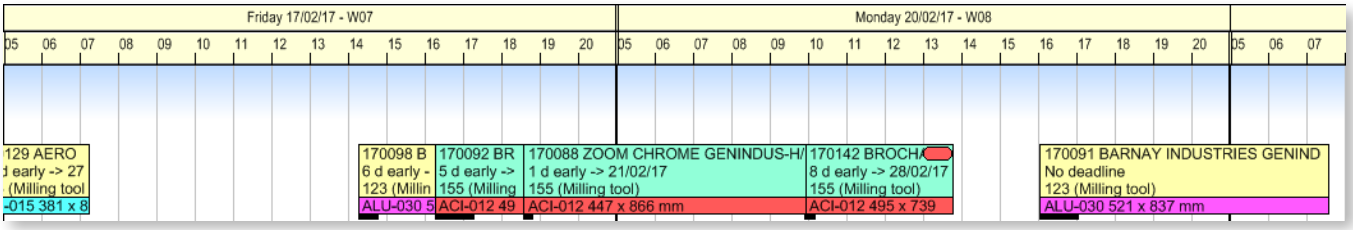
> **Note**
> The final result may slightly differ from what you asked: indeed, when planning assistance is active, Direct Planning tries to optimise the schedule according to the chosen automations.
> Likewise, Direct Planning can modify (or even reject) moving operations if the related jobs belong to a route which impose constraints on them.

Several types of movements are possible:

## Move a job to a free slot, without changing machine

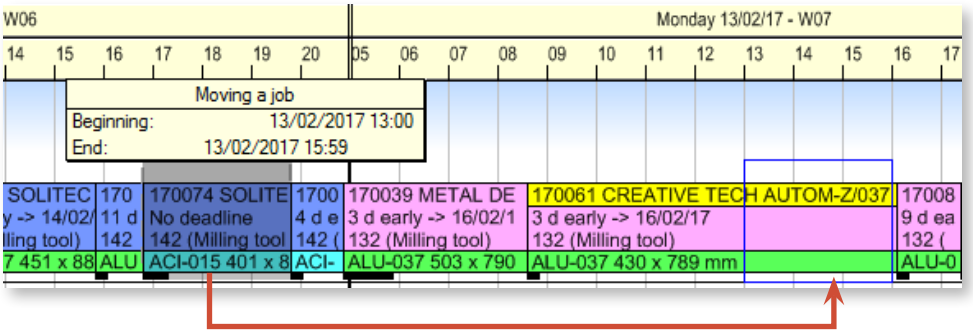



When you release the mouse, without any active adjustment, the job is moved to your chosen location (the blue rectangle), leaving a gap at its original location (which can be filled via adjustment, see section 5.6. *Planning assistance*) ▼

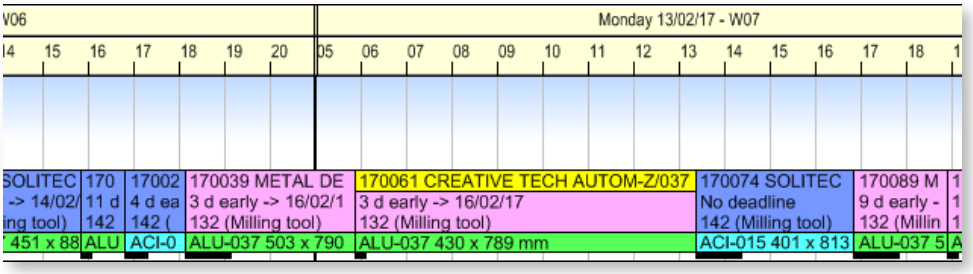



You can also perform this action by selecting a job and right-clicking at its destination. Then, you just have to select **Move selection here**.

## Move a job to an occupied slot, without changing machine



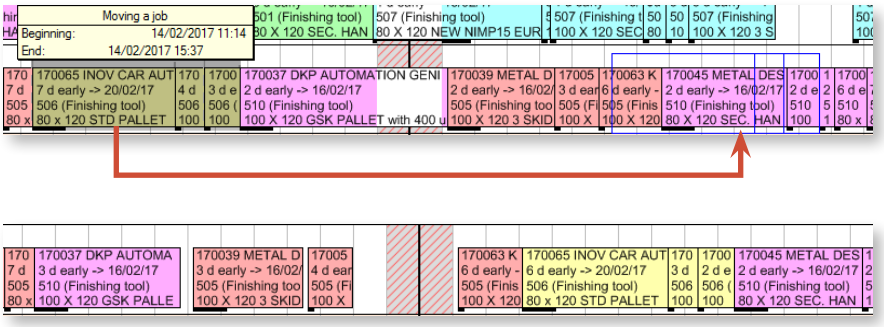

The moved job is placed right after the destination job. Because left adjustment is active, the gap is filled ▼



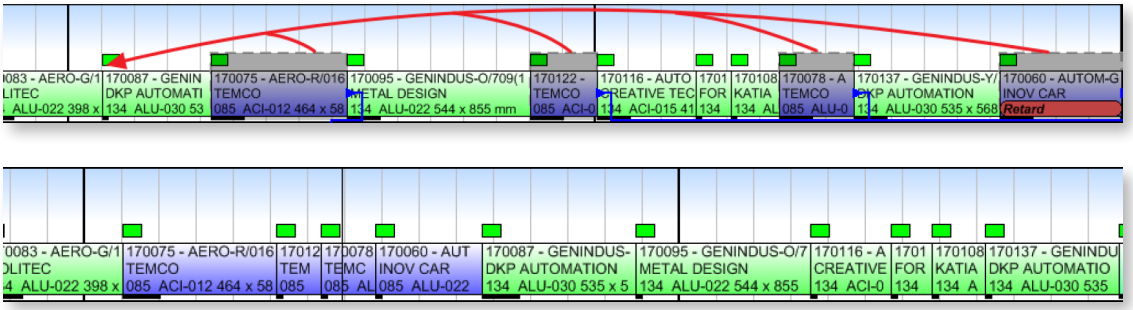

This simply comes down to modifying the sequence of jobs. Without adjustment, the gap is not filled.

## Moving a group of jobs to an occupied slot without changing machine

If the selected jobs are grouped, they will remain grouped at the drop location:



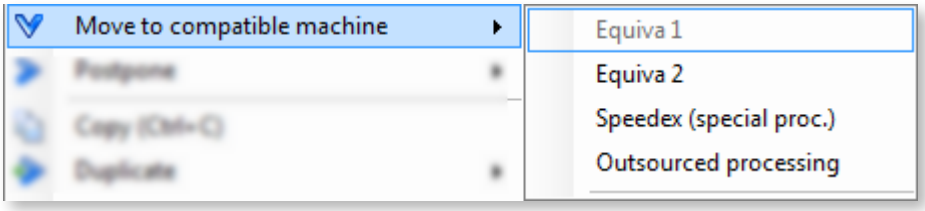

If the selected jobs are not grouped, the movement will automatically group them against the left-most selected job. This is a very useful action to position and gather multiple jobs, with a single drag-and-drop operation:



The context menu **Cluster jobs of selection** also groups all selected jobs against the left-most selected job, which is particularly useful to gather jobs remote from each other.
For “long distance” displacements, simply select your jobs and without dragging them, go to the drop location, right-click on the schedule background, and select **Move selection here** in the context menu. This replaces the “cut/paste” (Ctrl+X) function which was little used in Industry and Project modes because it broke links.

## Moving a job on a compatible machine

To move quickly a job to a compatible machine, right-click on the job to move, select **Move on a compatible machine** and select the appropriate machine:

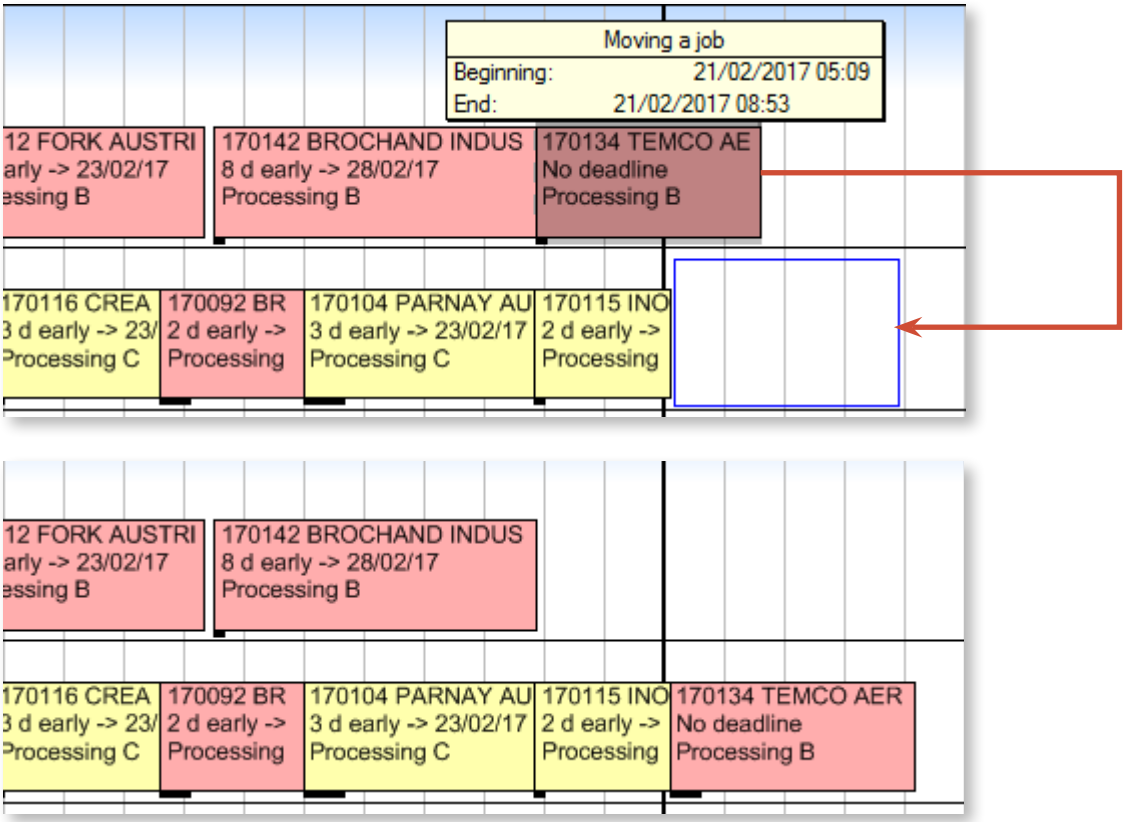



◄ The current machine is greyed out.

▲

The compatible machines proposed in the sub-menu are those gathered in the same family in the **Data** > **Operations and machines** menu.

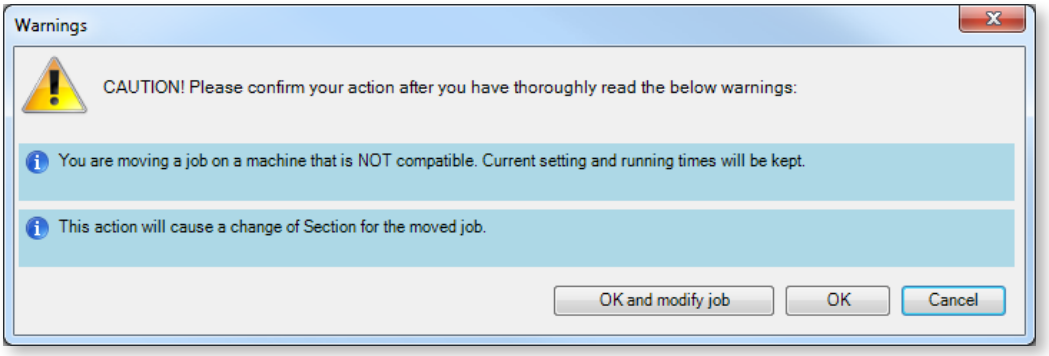
If you move a job to a compatible machine (on another line), Direct Planning behaves the same as for a movement on the same machine:




With automatic calculation of job duration enabled, Direct Machine can recalculate automatically the job duration while taking into account setting times and work rates specific to this destination machine.

## Moving a job to an incompatible machine

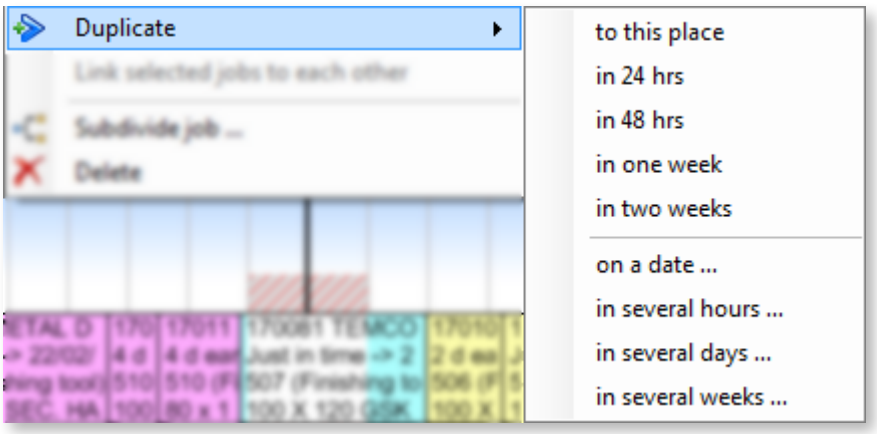
When you move a job to an incompatible machine, Direct Planning displays the following warning (which can be customised with programmable formulas to reflect your business constraints):




If you confirm (OK button), the job will be moved as per your request, but you are responsible for verifying the job details.
You can also click on OK and modify job to confirm. This opens the details of the moved job, to check and modify it if needed.

## 5.3.3. Duplicating jobs

Duplicating a job creates a new job which can be left untouched or modified. This allows the quick creation of similar jobs. When duplication is completed, you can modify the newly created job (if needed).




◄ Use the job context menu to choose where the job should be duplicated: at a predetermined fixed interval (upper part) or according to an input value (lower part).

**Note**
The requested duplication may be influenced by the adjustment to the left or right configured under the under the **Planning assistance** tab.

## 5.3.4. Copying/pasting jobs

The simplest and quickest method for copying/pasting jobs in Direct Planning is to use usual Windows shortcuts (Ctrl+C to copy, Ctrl+V to paste).

**OUR ADVICE**
The copy/paste functions offer a quick way to create new jobs with similar characteristics: instead of creating new jobs from scratch, it may be helpful to use the copy/paste function from existing jobs. You only have to make small modifications to the new job, if necessary.

Because pasting a job is like creating a job, the original time constraints apply.

Besides, the machine compatibility check is also performed when you paste a job.

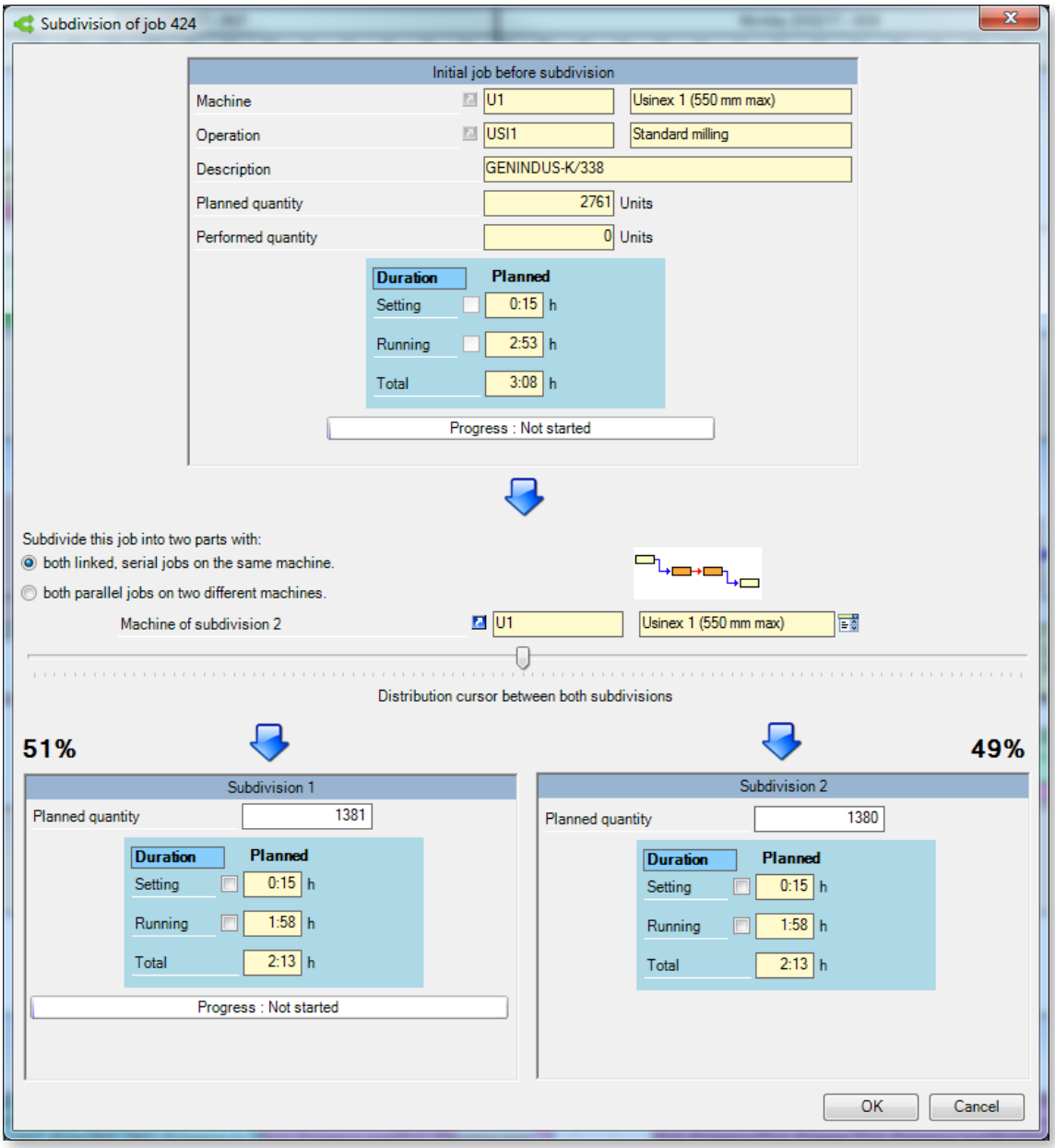
## 5.3.5. Subdividing jobs

Internal organisation may require you to subdivide jobs, that is to say split them in 2 parts distributed as desired.

For example, delivery constraints may require you to produce part of the quantity immediately to deliver it as soon as possible, and postpone the production of the remainder at a later date. Or you can offload an overloaded machine by assigning all or part of the workload to another machine. Subdivided jobs can be subdivided again. Direct Planning keeps existing links and transmits them the to the result-

ing job.

In the schedule, right-click on a job to open the context menu.
Select **Subdivide job**:

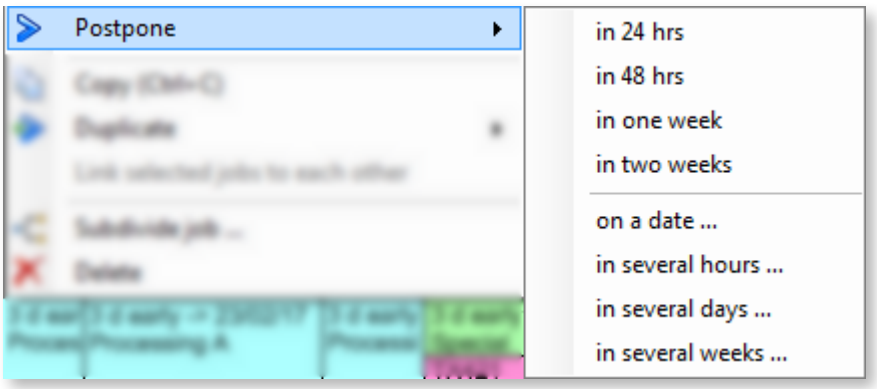



The upper part of this window provides you with information on the current job before separation. You cannot modify this data. However, you can choose whether the new jobs will both run on the same machine or if they will be paralleled on two different machines. A graphic representation helps you get an idea of the result.

A cursor is then available to adjust quantities for each job (by default, Direct Planning splits the job in half). Moving this cursor updates the expected quantity for each job. If you do not wish to use the cursor, you can enter directly the quantity to produce in these fields.
While Direct Planning calculates setting and running times in this example, you can force these values manually by checking the corresponding boxes. You can also set the progress of the first job.

## 5.3.6. Postponing jobs

You may have to postpone a job for different reasons like waiting the receipt of an item, various hazards, etc. After selecting the affected job, right-click to open the context menu:




◄ Use the job context menu to choose when the job should be postponed: at a predetermined fixed interval (upper part) or according to an input value (lower part).

**Note**
The requested postponement may be influenced by the adjustment to the left or right configured under the under the **Planning assistance** tab.

## 5.3.7. Deleting jobs

On a selection of jobs, click on **Delete**. Another (quicker) way is to press the **Del** key. You will be asked to confirm.

The **Ctrl+Z** combination is available to cancel any unintentional deletion. Conversely, the **Ctrl+Y** combination can be used to restore a deletion. You can also use the quick tools at the top of the screen.

## 5.3.8. Accessing the jobs details

Previously covered when discussing how to create jobs manually, the job details window is the dashboard containing all job-related information.

To access it, select a job and click on **Job detail** in the ribbon, under the **Edit** tab. You can also right-click on the job and select **Modify job**, or simply double-click on the job in the schedule.

# 5.3.9. Scheduling/Unscheduling jobs

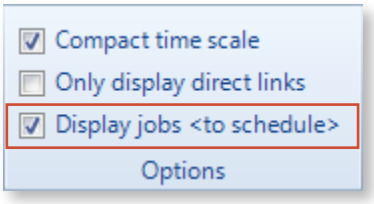
In the Gantt, a job to schedule appears on a special line.

This line has 2 functions:

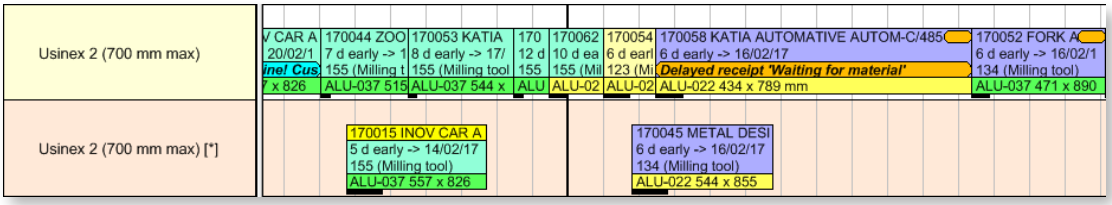
1. Following an import, it contains all jobs coming from the ERP: any imported job in Direct Planning is set “to schedule”.

2. It is used to place jobs pending scheduling in order not to forget them.

This line only displays when there are jobs to schedule and when the **Display jobs to schedule** option is checked in the **Display** menu:

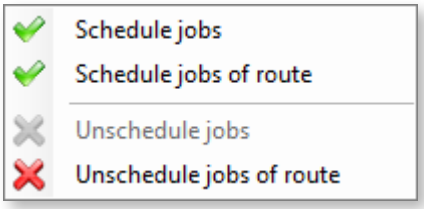



It is located under the actual schedule line, in a different colour and with the machine name followed by the [*] character, as in the following screen capture:




Various methods are available to schedule a job placed on the “to schedule” line:

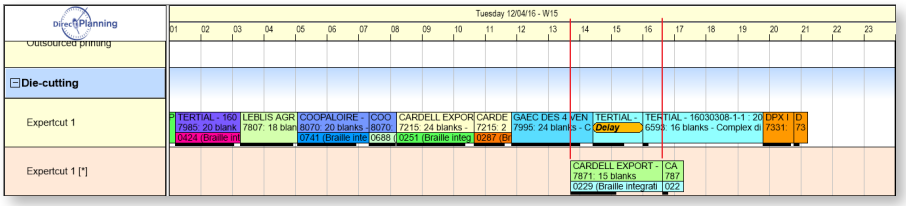
1. Right-click on a job to schedule and select **Schedule** > **Schedule jobs** (this menu can also be used to schedule the whole route to which the job belongs):



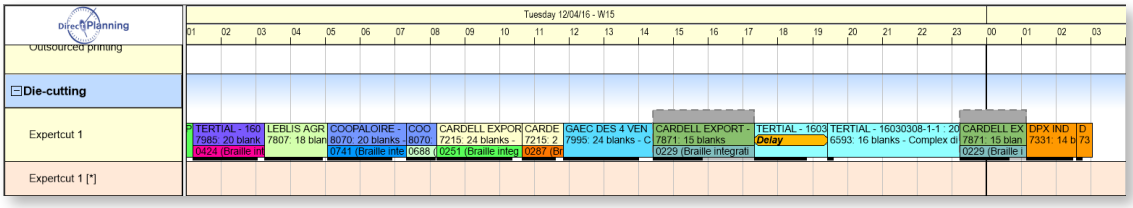

2. Move the jobs using the mouse.
3. Under the **Edit** tab, use the **Schedule** menu to toggle jobs between scheduled and to schedule lines in the schedule.

In cases 1 and 3 (using menu functions), for each job to schedule, the program remembers the pair

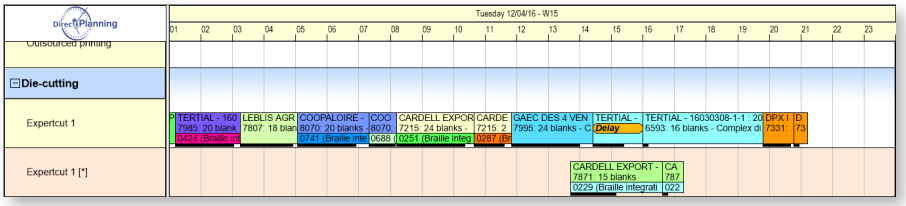
"scheduled job cross by beginning of job to schedule" and the job is scheduled after the scheduled job memorized:

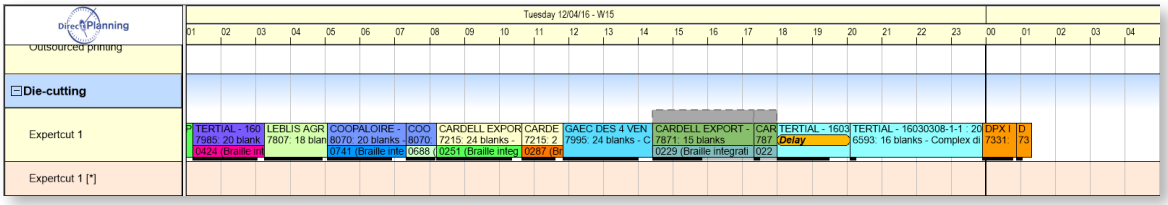



Once scheduled, the jobs are separated, each job to schedule is scheduled right after the scheduled job:




In case 2 (moving with the mouse), it's the grouped move function explained in section 5.3.2. *Moving jobs* which is used:

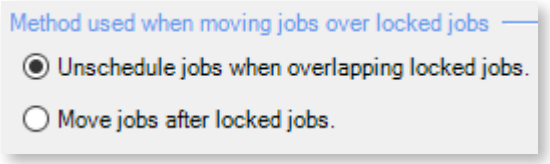


# 5.3.10. Locking jobs

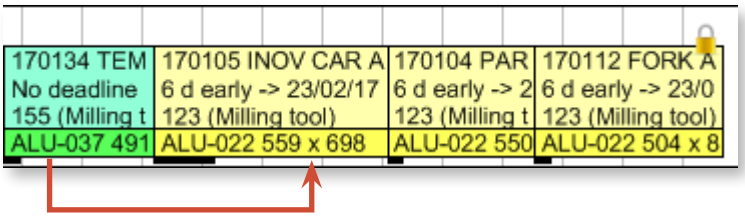
You can quickly lock/unlock a job via right-click **Lock/Unlock** on a job, via the **Edit** > **Lock/Unlock** menu or in the job details.
A locked job cannot be modified or moved.

When moving a job makes another job collide with a locked job, Direct Planning offers the administrator the ability to choose between two behaviors (**Configuration** menu > General **configuration** > **Planning assistance**)

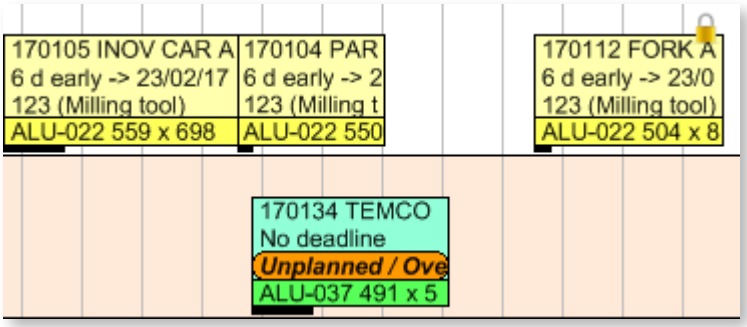



Method 1: Unschedule the jobs colliding with locked jobs

The job conflicting with the locked job is unscheduled. This avoids the job being thrown too far down the schedule if several locked jobs follow each other.

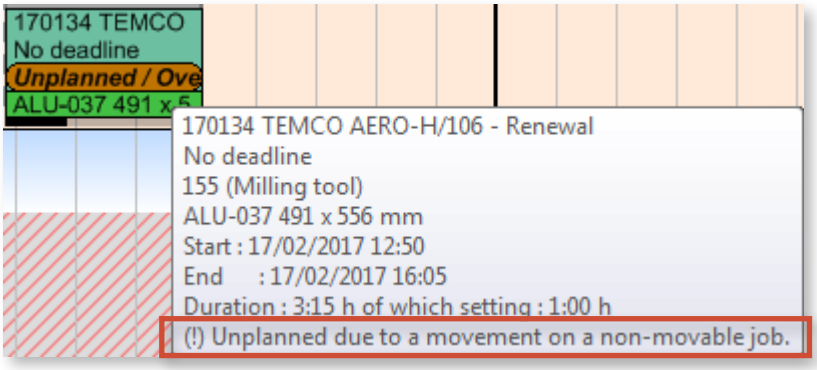



◄ In the opposite example, the objective is to move the first job (in green) after the second job (170105). Normally, this would shift jobs 170105 and 170104 to the right (left adjustment).

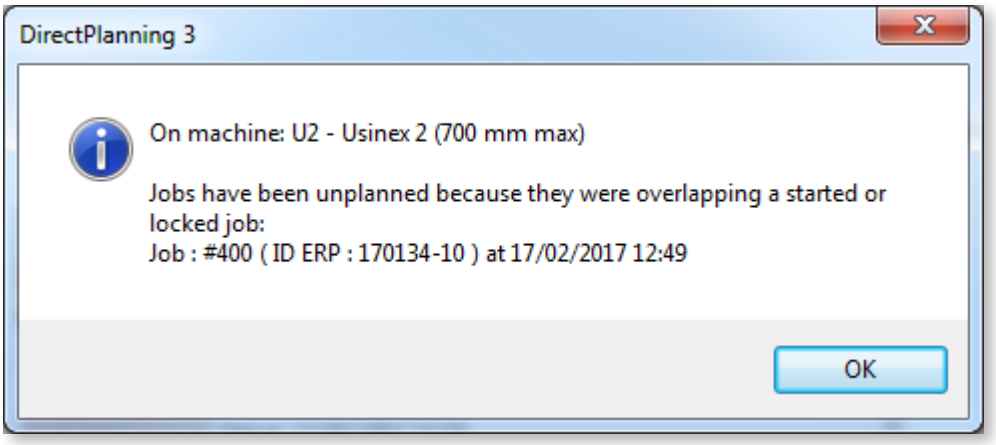



Because the last job is locked, this operation will unschedule the 170104 job colliding with it.

Please note that an alert is automatically generated on the unscheduled job:

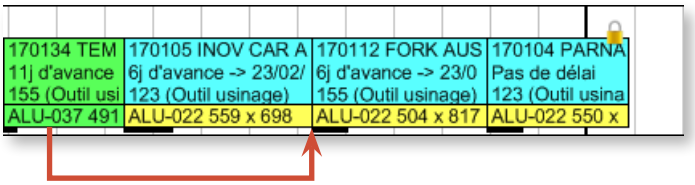


And a warning screen appears before the job is unscheduled:

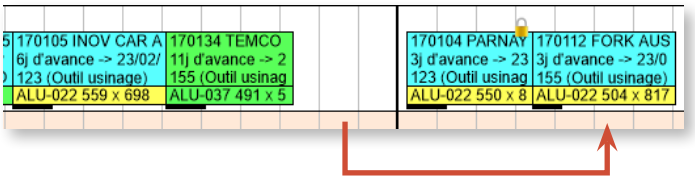



Method 2: Move jobs after the locked jobs

In this example, we want to move the first job (in green) after the second job (170105). Normally, this would move jobs 170112 and 170104 to the right (left adjustment).




This time, job 170112 is not unscheduled but rather moved after the locked job:

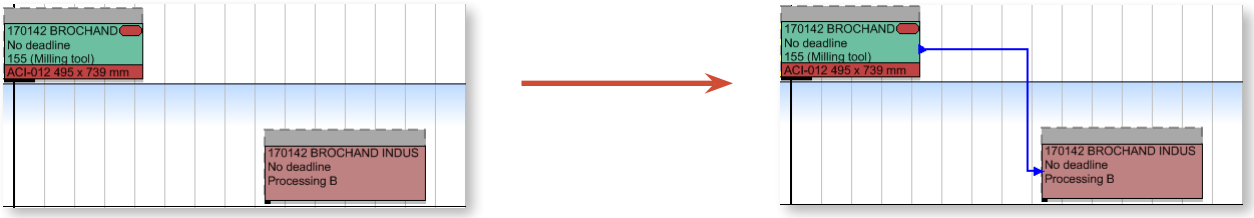


# 5.4. Creating routes

Direct Planning allows the creation of links between jobs. Routes can be defined as sets of jobs which must be performed in a specific chronological order. A route implies the respect of time constraints. A route contains a number of jobs which can belong to one or more machines.

## 5.4.1. Creating routes quickly

To create simple links, select two jobs to connect, right-click on one of them and select **Link selected jobs to each other**:



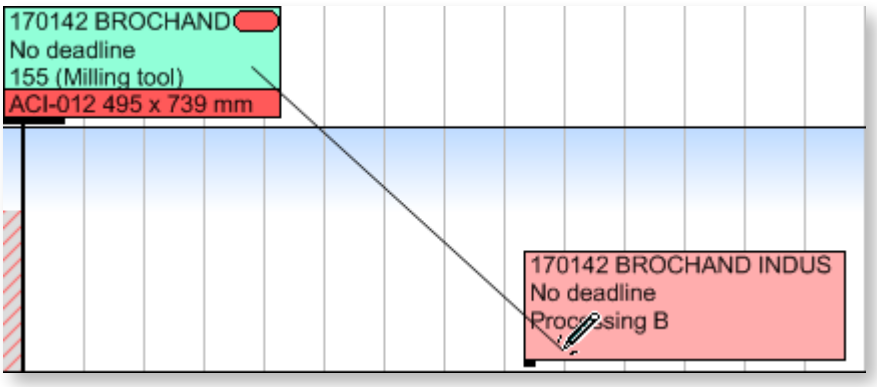

This mode is completed by the **Link creation** mode which is more exhaustive and allows to create more complex links.

## 5.4.2. Link creation mode

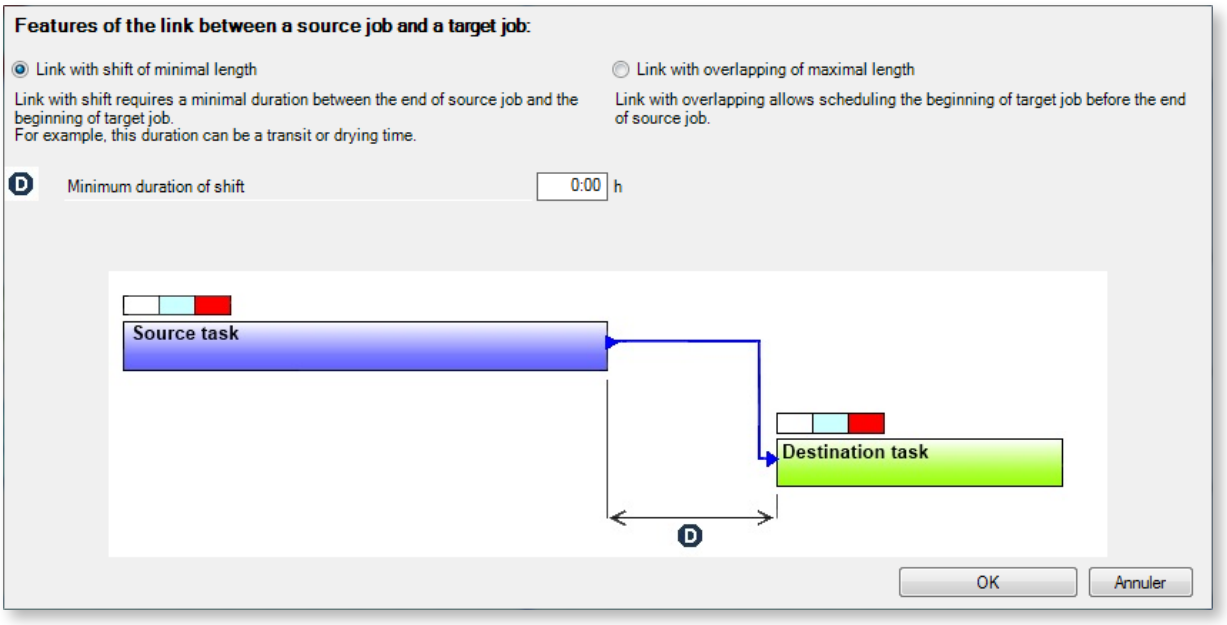
This mode can be accessed via the **Edit** > **Link creation (Ctrl+I)** tab.

Switching to Link creation mode turns the pointer of your mouse into a pencil:

This pencil allows to “draw” links between jobs, by moving it from a job to the other.



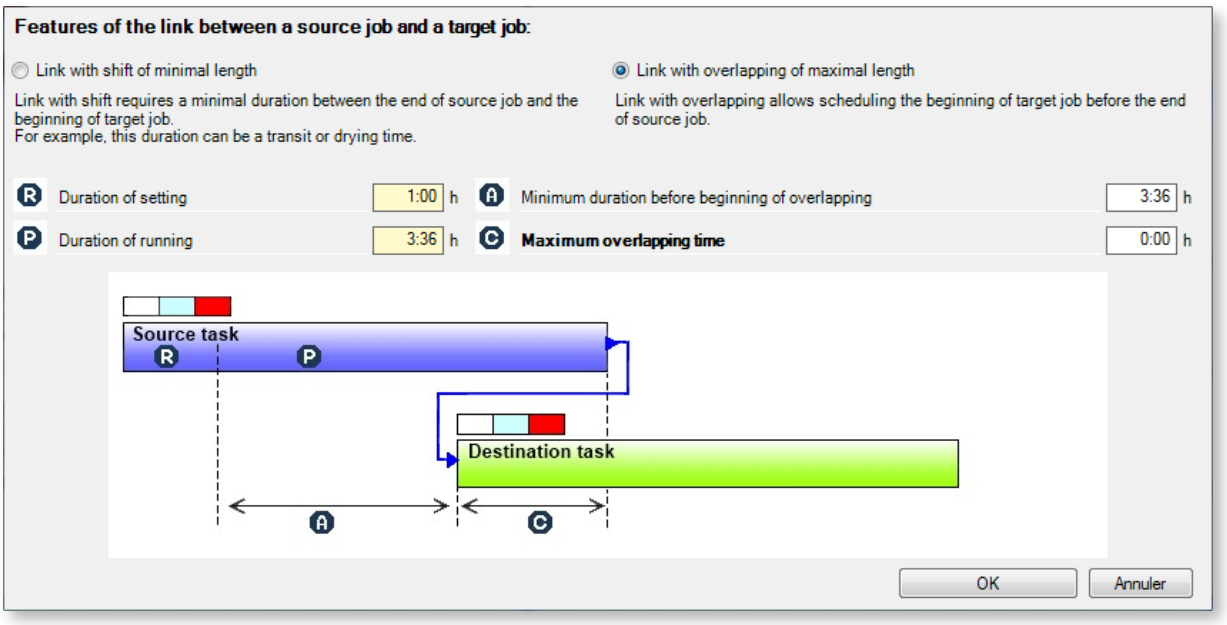

When releasing the mouse, the link creation window displays to configure the gap between jobs:




Two options display when linking two jobs:

1. **Link with shift of minimal length** (above): this option option is recommended when the jobs must not overlap. Setting the **Minimum duration of shift** field to 0:00 h makes the destination job start right after the source job.

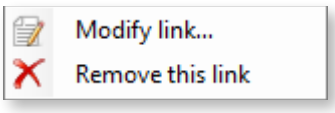
2. **Link with overlapping of maximal length**:




This option allows to handle job overlapping. In our example, the destination job can start **10 minutes** before the end of the source job (zone C). Otherwise, see it the other way, thinking that you have to wait **3h26** after the setting of the source job (zone A) before starting the destination job (which boils down to the same thing).

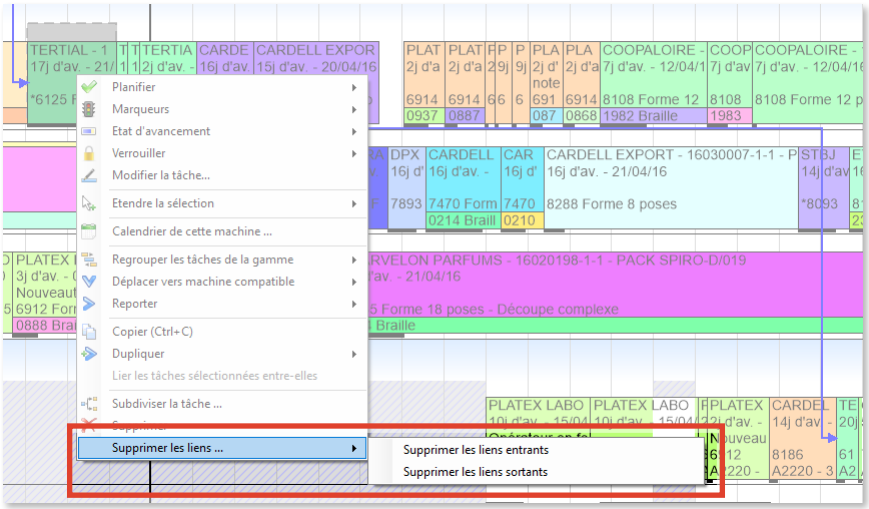
In both cases, Direct Planning relies on the P running time and recalculates A from C or C from A.

To **modify/delete** a link, the quickest method is to right-click on it and choose the associated option:

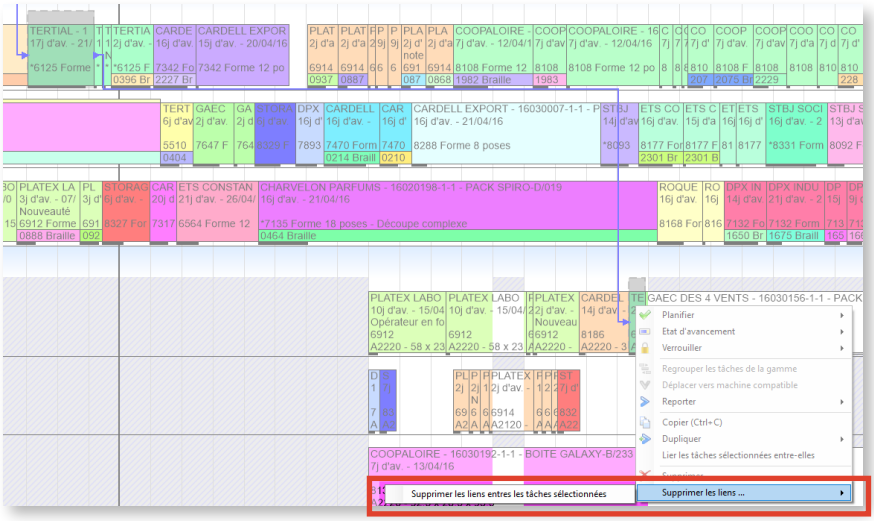



## Deletion of links between jobs

To help you delete links between jobs, an entry is available when right-clicking on a job.
If you select a single job of the route, the **Delete links …** menu will offer two actions: **Delete incoming links** and **Delete outgoing links**:




If multiple jobs are selected, this menu will offer the **Delete links between selected jobs** action.



# 5.4.3. Visual appearance of links

## Trail

Links are materialised by lines which can take 3 different aspects depending on the case:

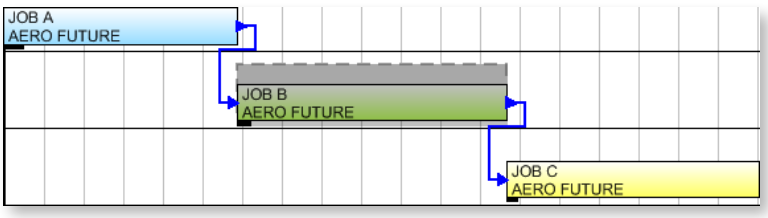
| Appearance | Type | Description |
|---|---|---|
| ——— | Solid line | Exact chaining |
| — — — — — | Dotted line | Gap |
| — · — · — · — · — | Dotted line and dots | Overlapping |

## Colour of links

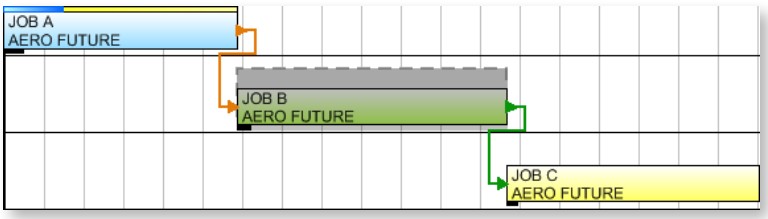
The administrator can configure the display mode to have colour links reflect the progress of the route. Link colours are based on the following rules:

| Colour | Type of link |
|---|---|
| | Link whose upstream job is complete |
| | Link whose upstream job is started |
| | Link within a route in which there is one or more started or completed job |
| | Link within a route with no started job |

Examples:

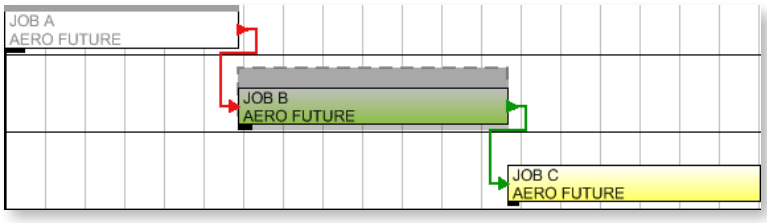



◄ No job of the route has started: all links are displayed **in blue**.




◄ Job A has started: the A-B link are displayed **in orange**.

The B-C link displays **in green** to indicate that a job of the route has started.

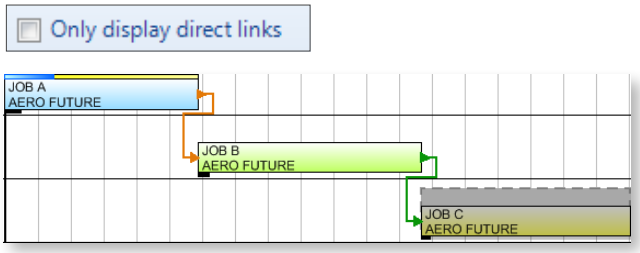


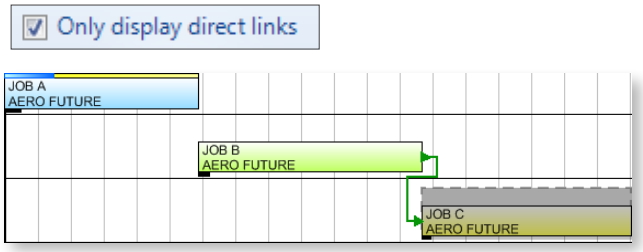

◄ Job A is complete: the A-B link is displayed **in red**.

The B-C link displays **in green** to indicate that a job of the route has started (in this case it is completed).

## Link visibility

It is possible to display only the direct links for the selected job. The inbound and outbound links for the selected job will be the only links displayed.
To this end, check the **Only display direct links** box under the **Display** tab of the ribbon:

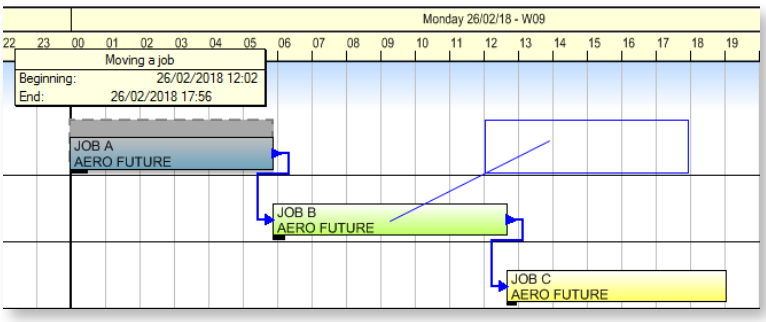



In both cases, job C is selected: whether or not **Only display direct links** option is checked, Direct Planning displays or hides link between jobs A and B.

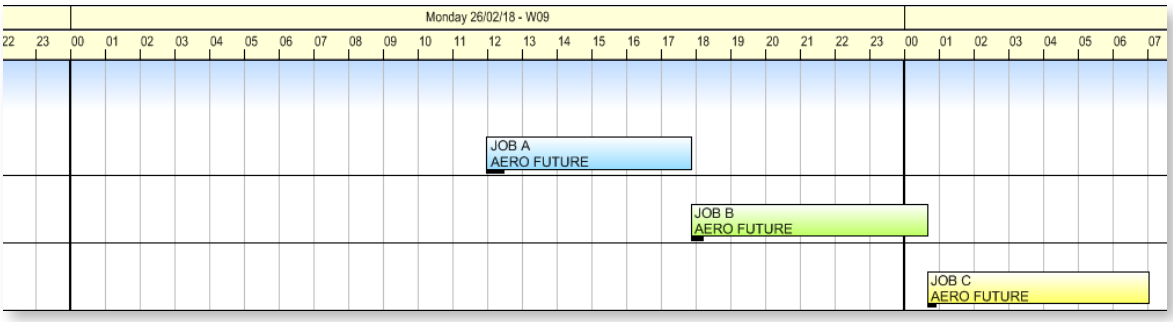
# 5.4.4. Manipulating routes

When moving a job belonging to a route, the other jobs of the route may also be moved depending on the route constraints:

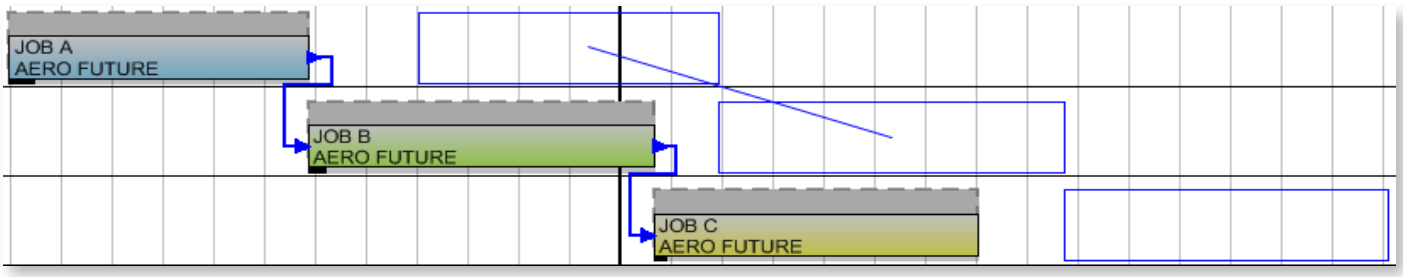



◄ In this example, the first job (A) of the route is moved to make it start at 12:00.

▼ Notice below that because jobs B and C are scheduled to start right after job A, they are also moved.

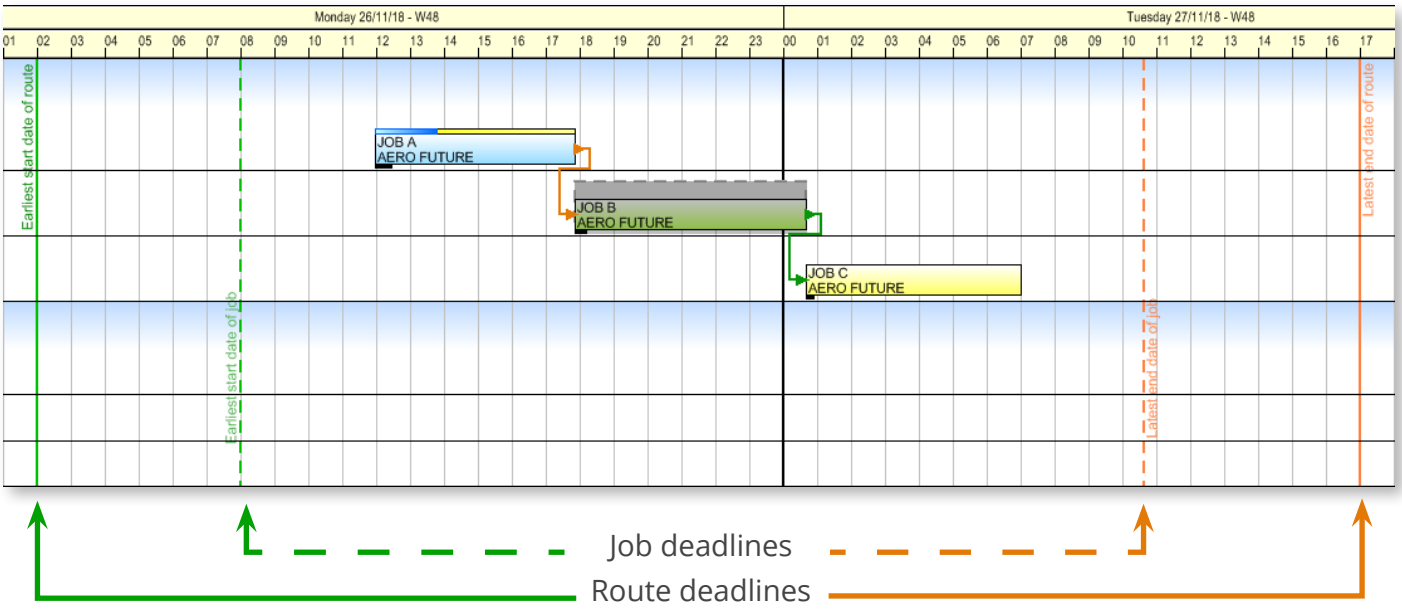



Select the different jobs of the route to preview their location after movement (materialised by blue rectangles):



# 5.4.5. Route deadlines

In the schedule, deadlines are materialised by vertical lines. They are displayed for jobs, routes and groups of jobs.
In the schedule, when you select a job, its deadlines display as vertical dotted lines (in **green** for the earliest start date and in **orange** for the latest end date). If the job belongs to a route, its deadlines display as vertical dotted lines (in **green** for the earliest start date and in **orange** for the latest end date), as in the following example:



# 5.5. Managing calendars

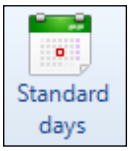
The calendar is used to define the following periods, for each machine:

- Regular activity periods
- Exceptional activity periods (occasional work overloads, extra opening days, etc.)
- Regular inactivity periods (periods outside working hours, periods of equipment maintenance, etc.)
- Occasional and planned inactivity periods (public holidays, vacations, etc.)
- Occasional and unplanned inactivity periods (sick leaves, machine downtime, etc.)

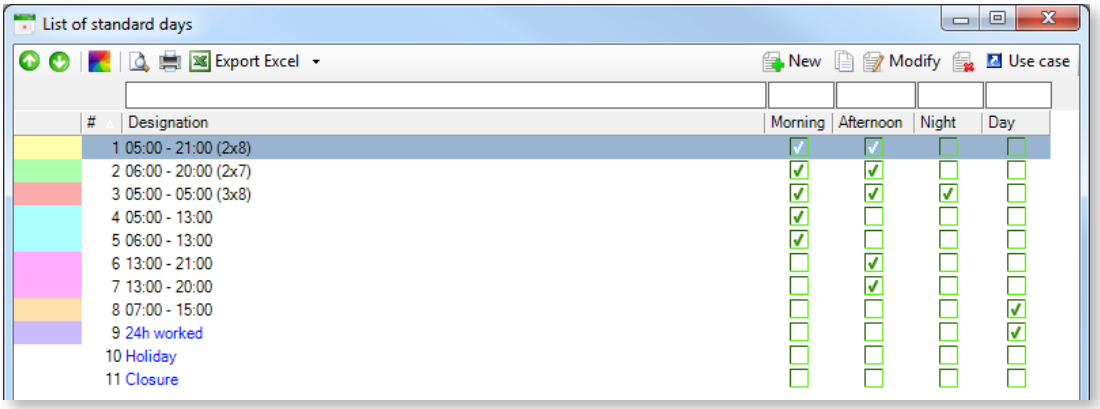
## 5.5.1. Standard days

The definition of standard days is required to create a calendar. You must create at lease one standard day to indicate your machine operating hours.

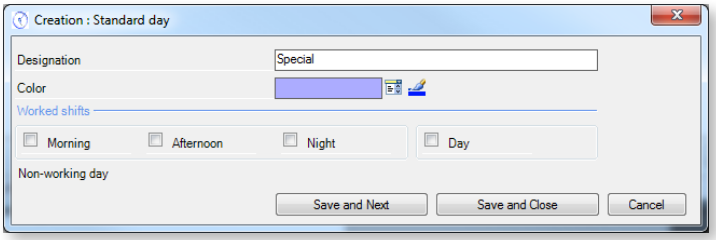
Standard days are available by clicking on **Calendars** > **Standard days** in the ribbon:




A standard day is defined by a designation and some shifts:

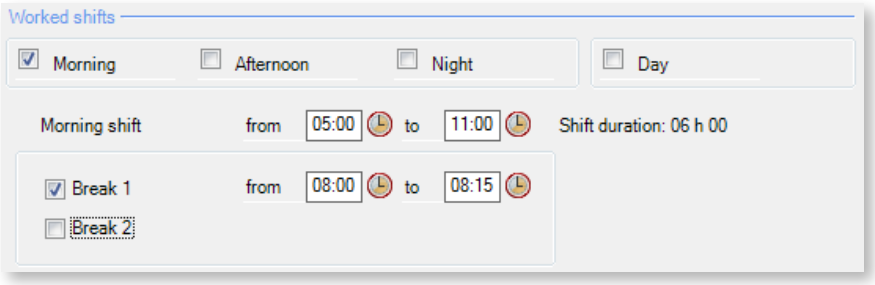



Click on **New** to create a new standard day.



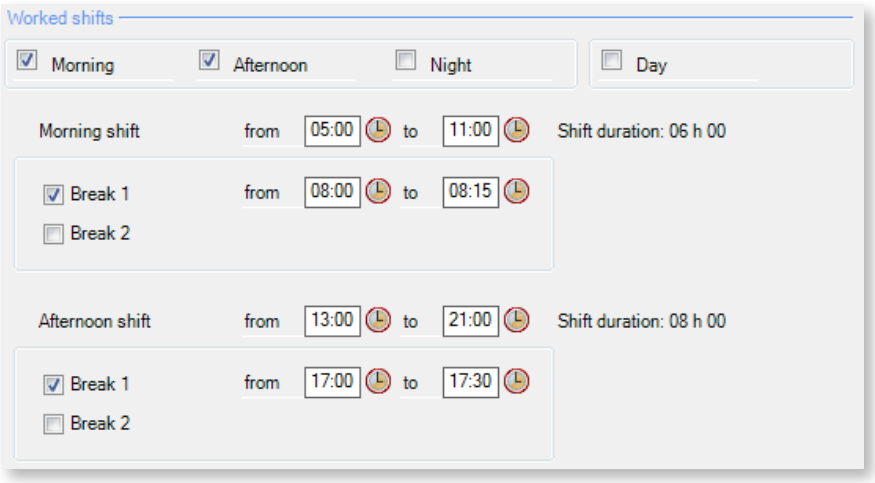

Enter a designation for this standard day and define a work shift. By default, no box is checked, which is why Direct Planning displays **Non-working day**.

Clicking on a shift opens a zone to enter the corresponding times as well as break periods, when appropriate:



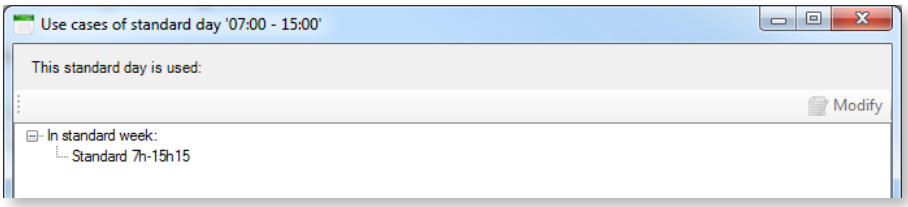

◄ When you enter the working hours for the shift, Direct Planning automatically calculates the corresponding duration.

Multiple shifts can be checked for the same standard day:




Click on **Save and close** to return to the list of standard days. Note that certain standard days are shown in blue in this list. These are preconfigured system standard days that you cannot delete but for which you can change the designation.

Click on **Use cases** to display standard weeks leveraging the selected standard day:




This screen is not only informative: selecting a standard week allows to modifying it by clicking on the **Modify** button at the top right hand corner.

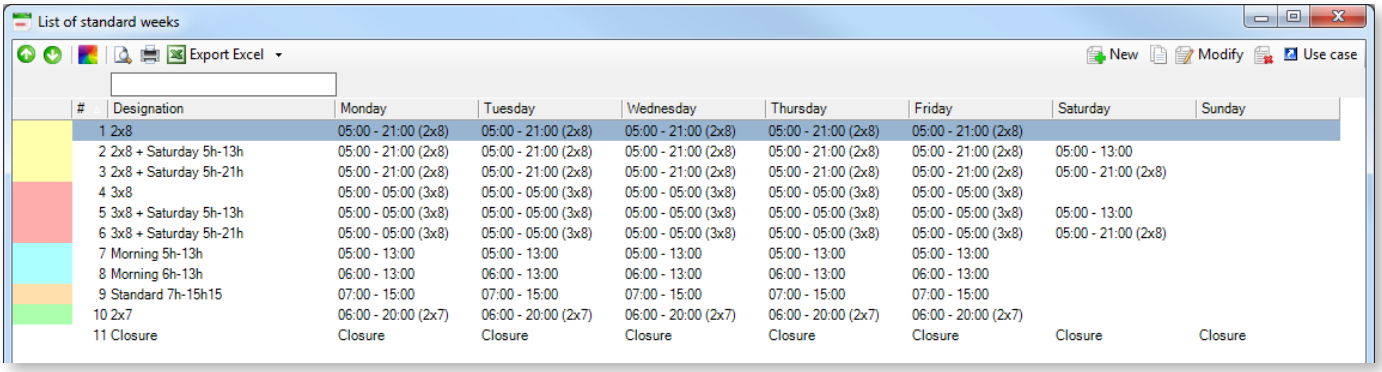
More information about standard weeks in the next section.

# 5.5.2. Standard weeks

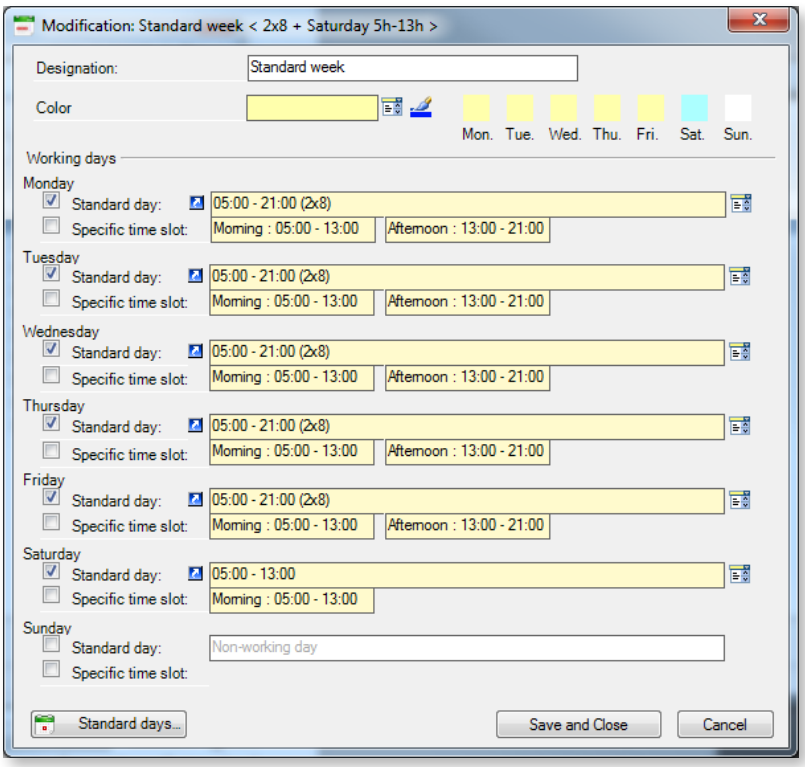
Standard weeks follow the same principles as standard days: whereas standard days break down into working hours, standard weeks break down into standard days.

You can access standard weeks by clicking on **Calendars** > **Standard weeks** in the ribbon:

When you click on this button, you get the list of standard weeks configured for the schedule:




Click on **New** to create a new standard week:




◄ After choosing a designation and a colour for the week, you assign a standard day to each day of the week.

Click on to pick from the list of standard days and on to view the details of the standard day.
If you wish to create a day without creating a standard day, click on **Specific time slot**. You can create specific working hours from a standard day if you select it beforehand.

The Standard days... button gives access to the configuration of standard days.

By default (if you do not check anything), the week day is a non-working day (similar to the **Closing** standard day in our example).

### Colour of a standard week

Colours play an important role in the visual identification of weeks in a calendar. A colour is automatically proposed by default for each standard week. You can modify the colour of the week conventionally or click on the colour square corresponding to each day of the week.

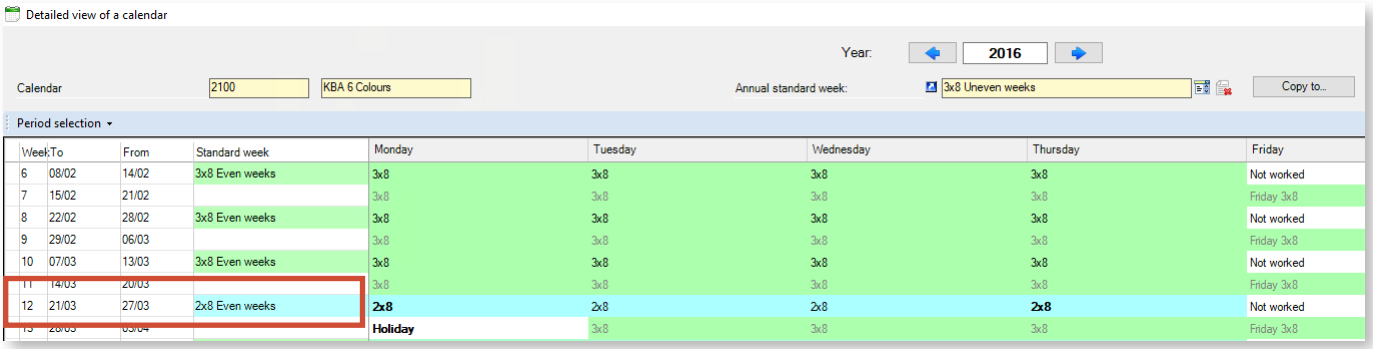
### Modification of standard days/weeks through import of a file

In the same fashion as you can modify dynamically your machine calendars, by assigning standard days and/or weeks with given week and days, you can now perform these operations using the following import commands:

| Command | Description |
|---|---|
| CAL-ST-L | Addition/Modification/Deletion of the standard week of a given week, using the designation of this standard week. |
| CAL-ST-C | Addition/Modification/Deletion of the standard week of a given week, using the code of this standard week. |
| CAL-JT-L | Addition/Modification/Deletion of the standard day of a given date, using the designation of this standard day. |
| CAL-JT-C | Addition/Modification/Deletion of the standard day of a given date, using the code of this standard day. |

Example of modification of the standard week using its designation (CAL-ST-L command):

Before importing: On machine 2100, the standard week assigned with week 12 is the "2x8 Even weeks" week:

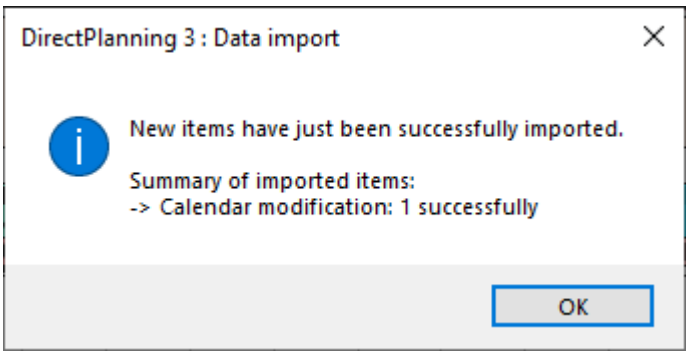


The import file will modify this week by running the following command:

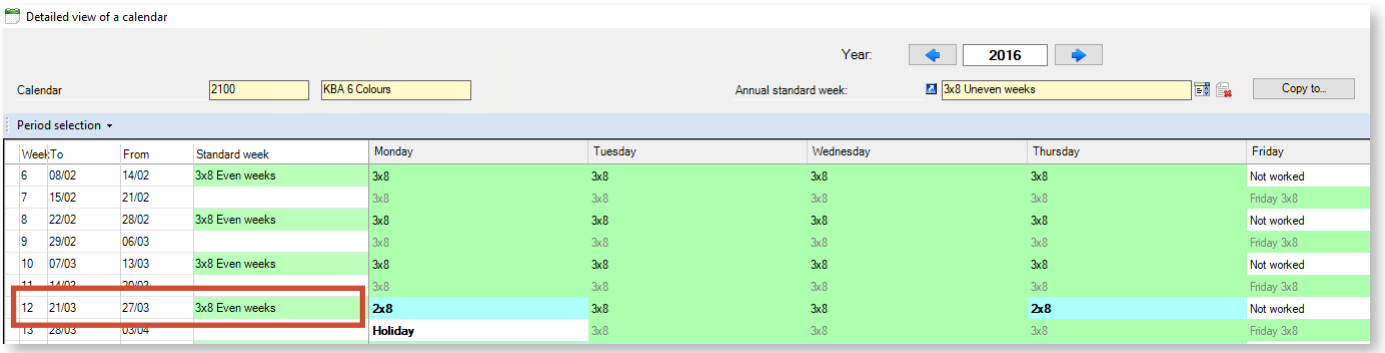
```
# TASK;Version;Action;ID MACHINE;DATE;CODE
CAL-ST-L;4;CM;2100;21/03/2016;3x8 Even weeks
```

Syntax : Job ; Version, Action, Machine code, 1st day of the week, designation of the new standard week

The following import confirms that the command was taken into account:




Result: The standard week of week 12 is now the week labelled "3x8 Even weeks":



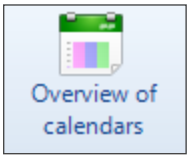

Observations

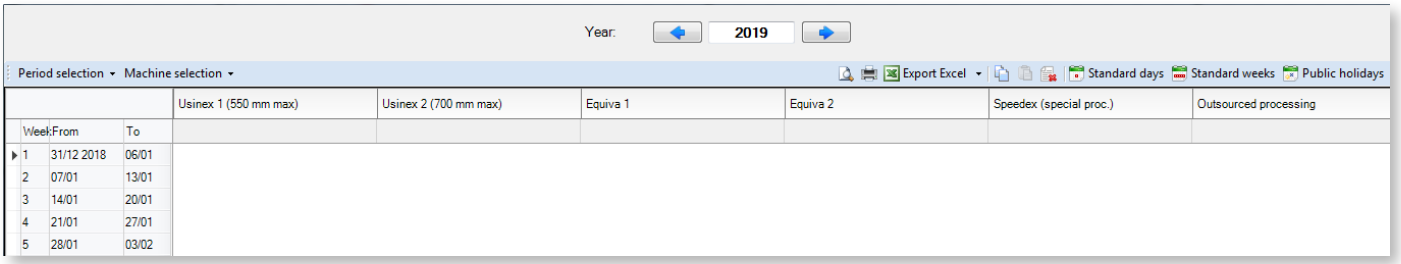
- Just like for the manual modification of the standard week, forced days are not affected by this command (Monday and Thursday of week 12 in the example above).
- Likewise, the annual standard week and holidays are not affected, their configuration being done once for the whole year.

# 5.5.3. General view of calendars

After defining at least one standard day and one standard week, you can define your calendars.

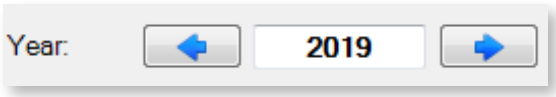
The general view of calendars is available by clicking on **Calendars** > **Overview of calendars**:



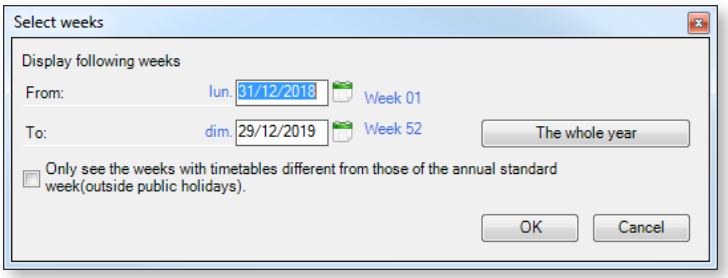




This screen is still empty because no calendars have been yet created. The quick action icons in the upper-right corner give access to the configuration of standard days/weeks and public holidays. Follow these steps to configure the new calendar:

1. Selection of the new calendar scope:

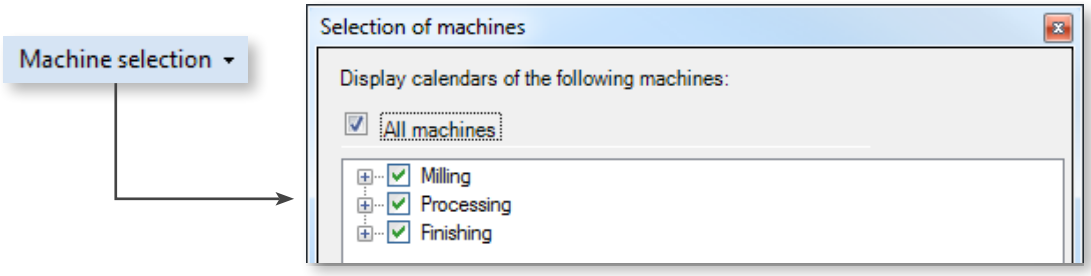



You can refine the selection of scope by clicking on **Period selection**:




◄ Use this screen to narrow the display of the calendar.
In this example, the calendar will only display the second semester for the year 2018: weeks 26 to 52.

2. Selection of machines governed by the calendar:




When this is configured, the selected machines are the only ones displayed in table column headers.

**Our advice**

You do not have to filter the list of machines: you may as well leave them all displayed, even if they are governed by different calendars. When creating calendars, you will have the option to do this by selecting the concerned machines beforehand.

3. Now that the “When” and “What” questions are answered, we can start to fill the calendar with an annual standard week, which will be discussed in more details in the next section.

# 5.5.4. Annual standard week

The annual standard week: defines the reference standard week used throughout the year. You will be able to add exceptions at a later stage.

First select the weeks/machines governed by the annual standard week (the selected cells are shown in blue):

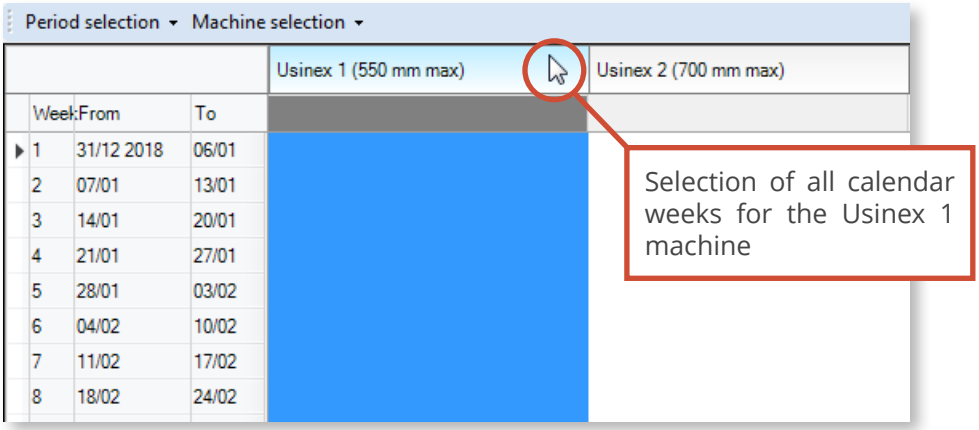
- You can click on a column to select a machine and all the weeks of the calendar.
- You can "draw" a rectangle with your mouse to select the machines/weeks of your choice.
- You can select all machines and all weeks by right-clicking in the calendar and choosing **Select all cells**.

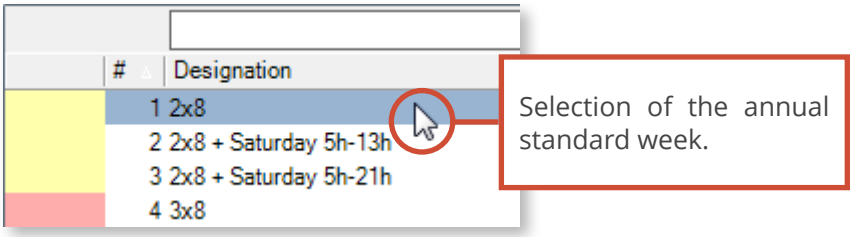
When your selection is made, click on the button, in the lower part, on the **Annual standard week** line.

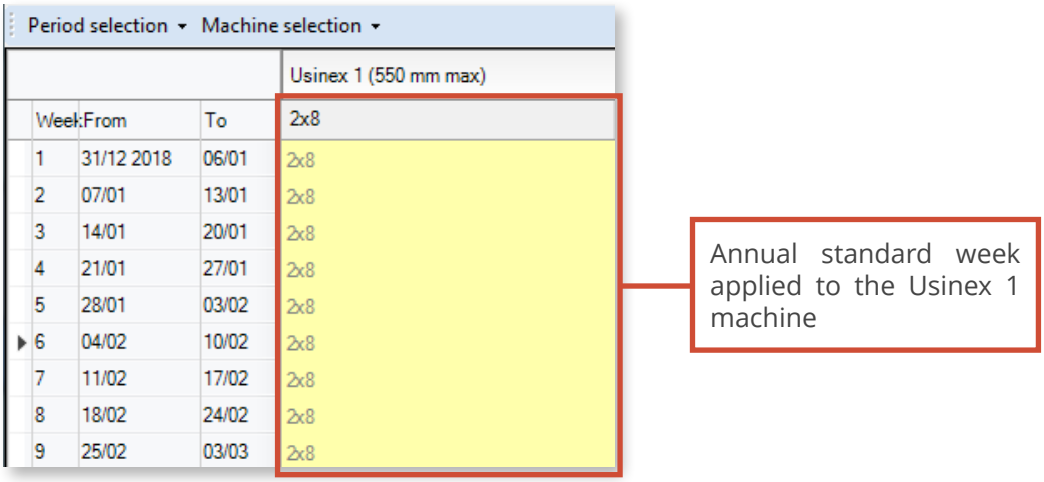
The annual standard week selection window opens, listing the standard weeks previously configured.

Select a standard week, which will populate the selected cells:

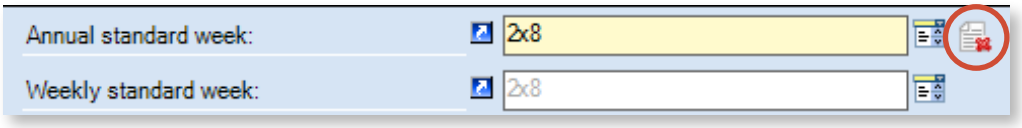
This sequence of tasks is shown below:



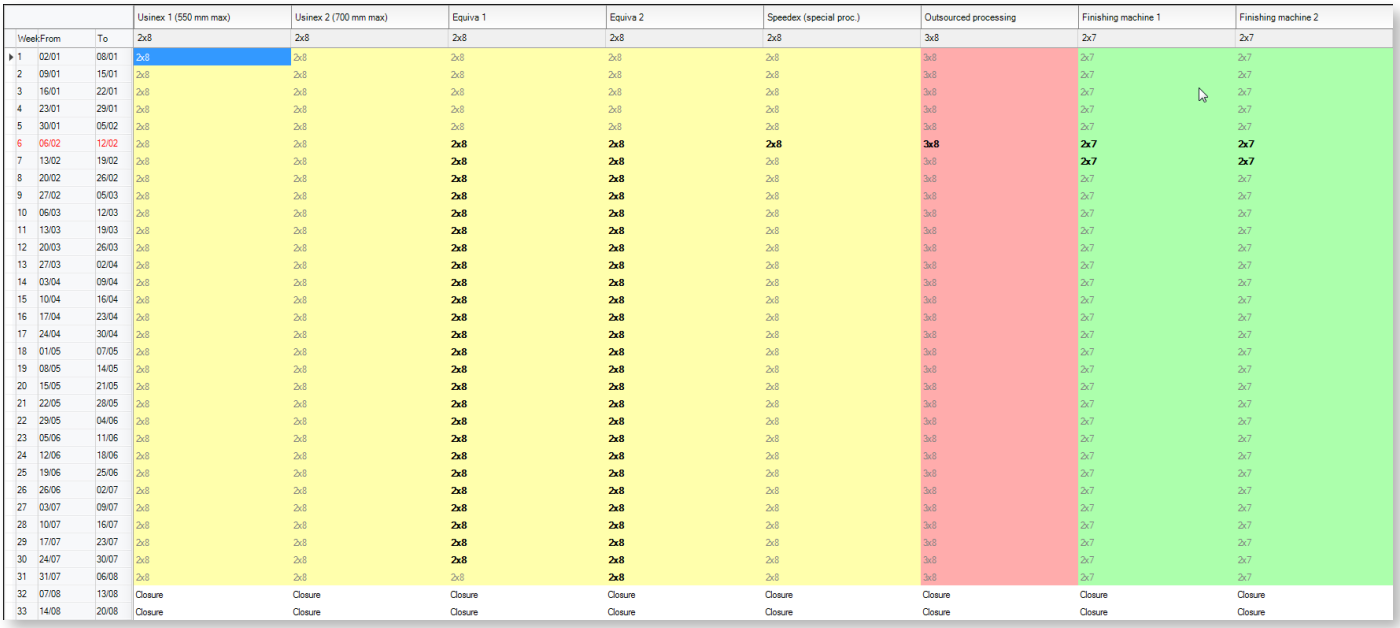





To delete an annual standard week from the calendar, selected the concerned weeks and click on the icon circled below:

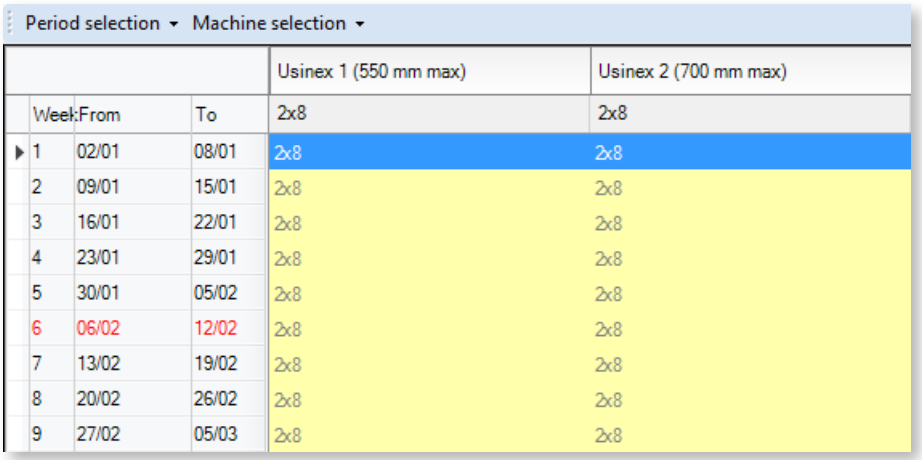



For the sake of readability, this documentation offers a narrow view of the calendar. However, you should adopt an holistic vision, in particular to benefit from the colours associated to standard days/ weeks:



# 5.5.5. Weekly standard week

You can force weeks (which are different from the annual standard week) for certain machines.
In a way, this action is like managing exceptions.
To do this, you must first select the concerned weeks and machines before choosing a week:

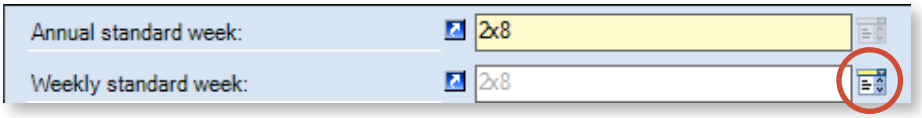



◄ Usinex 1 and Usinex 2 machines are currently subject to the annual standard week previously configured (2x8).

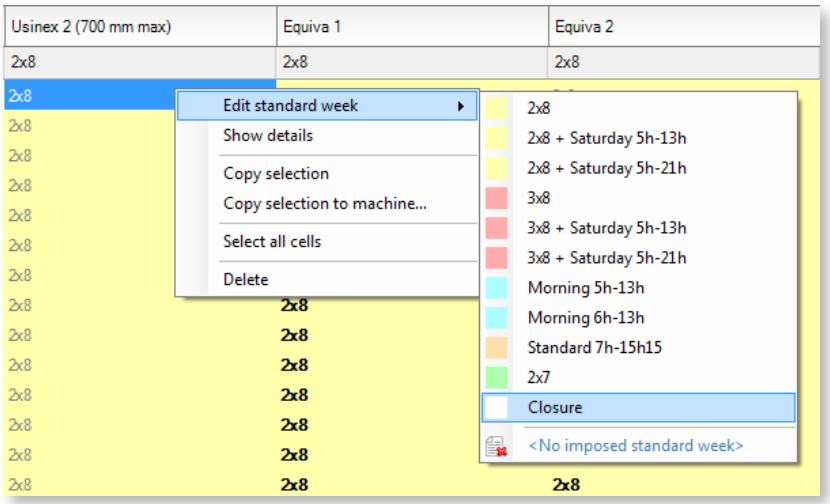
Let's assign them the **Closure** standard week for the 1st week of the calendar year.

2 methods offer the ability to can force a weekly standard week:

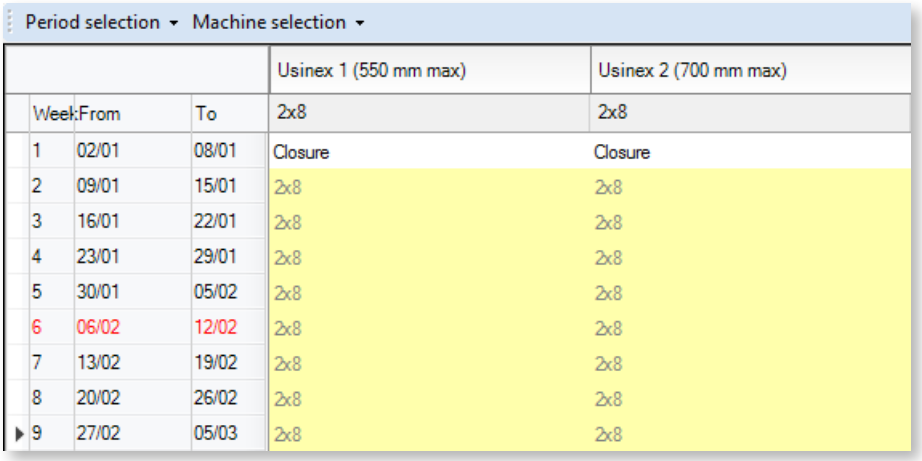
**Method 1**: by clicking at the bottom of the screen on the **Weekly standard week** line, in a similar way as for configuring the annual standard week:




**Method 2**: by right clicking on the selected week, and choosing **Edit standard week**:




The weekly standard week **Closure** displays in W1 for machines Usinex 1 and Usinex 2:

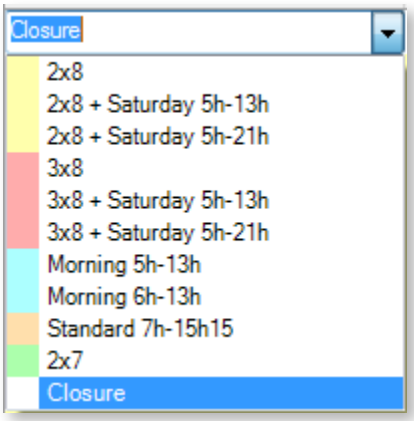



| Week | From | To | Usinex 1 (550 mm max) | Usinex 2 (700 mm max) |
|---|---|---|---|---|
| | | | 2x8 | 2x8 |
| 1 | 02/01 | 08/01 | Closure | Closure |
| 2 | 09/01 | 15/01 | 2x8 | 2x8 |
| 3 | 16/01 | 22/01 | 2x8 | 2x8 |
| 4 | 23/01 | 29/01 | 2x8 | 2x8 |
| 5 | 30/01 | 05/02 | 2x8 | 2x8 |
| 6 | 06/02 | 12/02 | 2x8 | 2x8 |
| 7 | 13/02 | 19/02 | 2x8 | 2x8 |
| 8 | 20/02 | 26/02 | 2x8 | 2x8 |
| 9 | 27/02 | 05/03 | 2x8 | 2x8 |

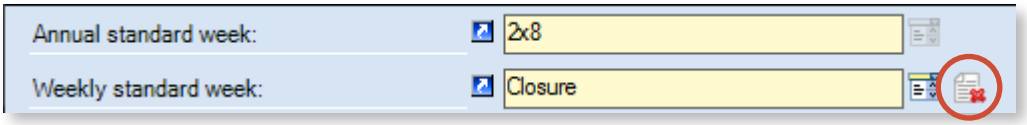
**REMINDER**

As a general rule, remember that the right-click always opens a context menu with the most common actions.
Right-click to view the available choices! Try on a selection of weeks/machines, on a column header (that is the name of a machine), on a week, etc.

To modify a weekly standard week for a single machine, a rapid method is to double-click on the corresponding cell, displaying the standard weeks available in a dropdown list:

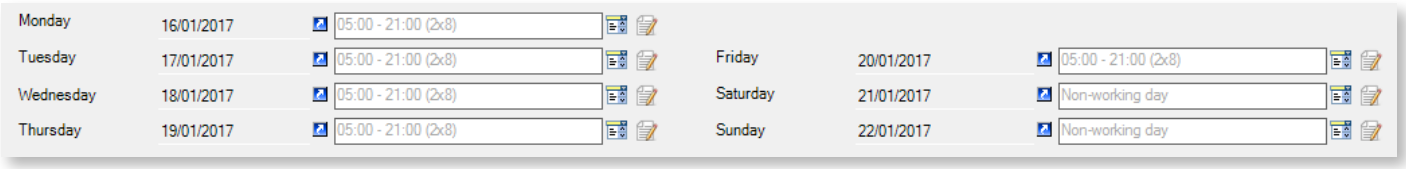



In the same way as to delete an annual standard week, click on the icon circled below to delete a weekly standard week:



# 5.5.6. Displaying week details

To display the details of the selected week, right click on the concerned week and click on **Show details**.




This detailed view provides you with 2 choices:

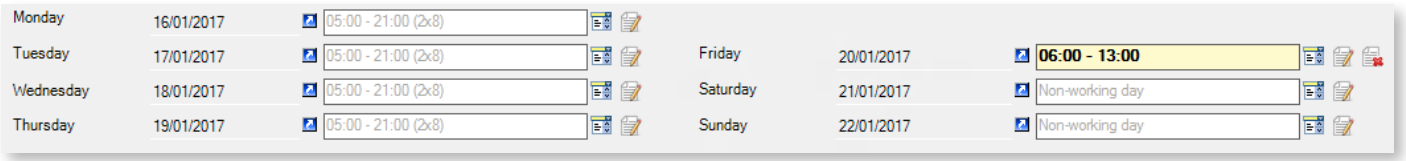
1. Force one or more days within this week (exception at the level of the day).
2. Force the working hours for a specific day (exception at the level of the working hours for a day).

Two cases may occur:

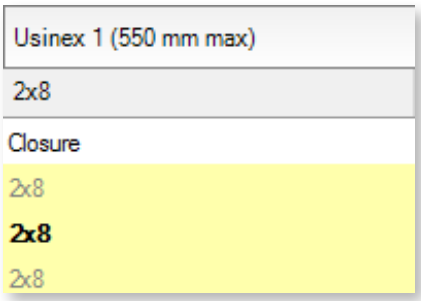
- Your selection covers a single week, the 7 days are displayed in details. You can modify the dates of your choice. If you modify one of these days, your modification will only affect that very day, unique in the year. :

- Your selection straddles multiple identical weeks. If you modify any of the 7 days, Monday for example, your modification will apply to all Mondays of your selection.

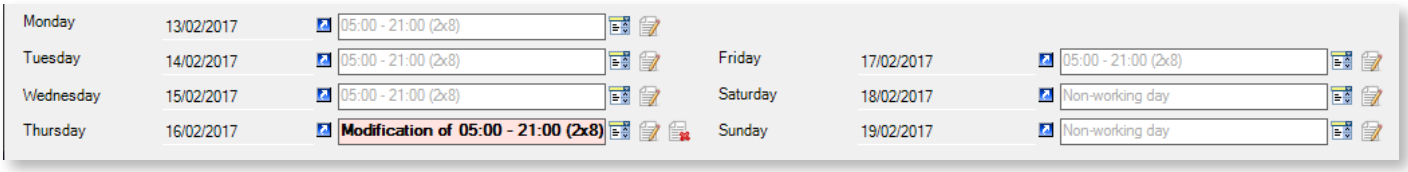
To force an exceptional day within the week, click on the icon in the line of the affected day and select the standard day of your choice. The new standard day displays in the detailed view:




In the example above, an exceptional day is configured on the Friday. Visually, this exceptional day stands out from the others with its yellow background. In the calendar, the week displays in bold to indicate that it contains an exception:



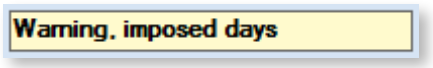

To force exceptional working hours within the week, click on the icon in the line of the affected day and select the hours of your choice. The new standard hours display in the detailed view:



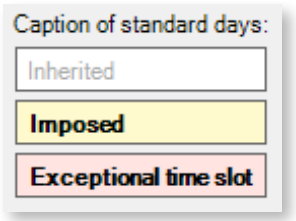

In the example above, an exceptional day is configured on the Thursday. Visually, this exceptional day stands out from the others thanks to its pink background. Similar as when we impose a standard day, the week displays in bold to indicate that it contains an exception.

The icon only shows the hours for the selected day.

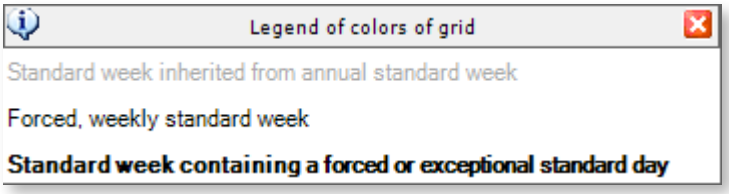
Whether the change affects days or hours, a warning informs you that the week was modified:




At the bottom right of the window, a caption reminds the status of standard days according to their typography:




Another caption is also available at the top right of the window, when clicking on the icon:



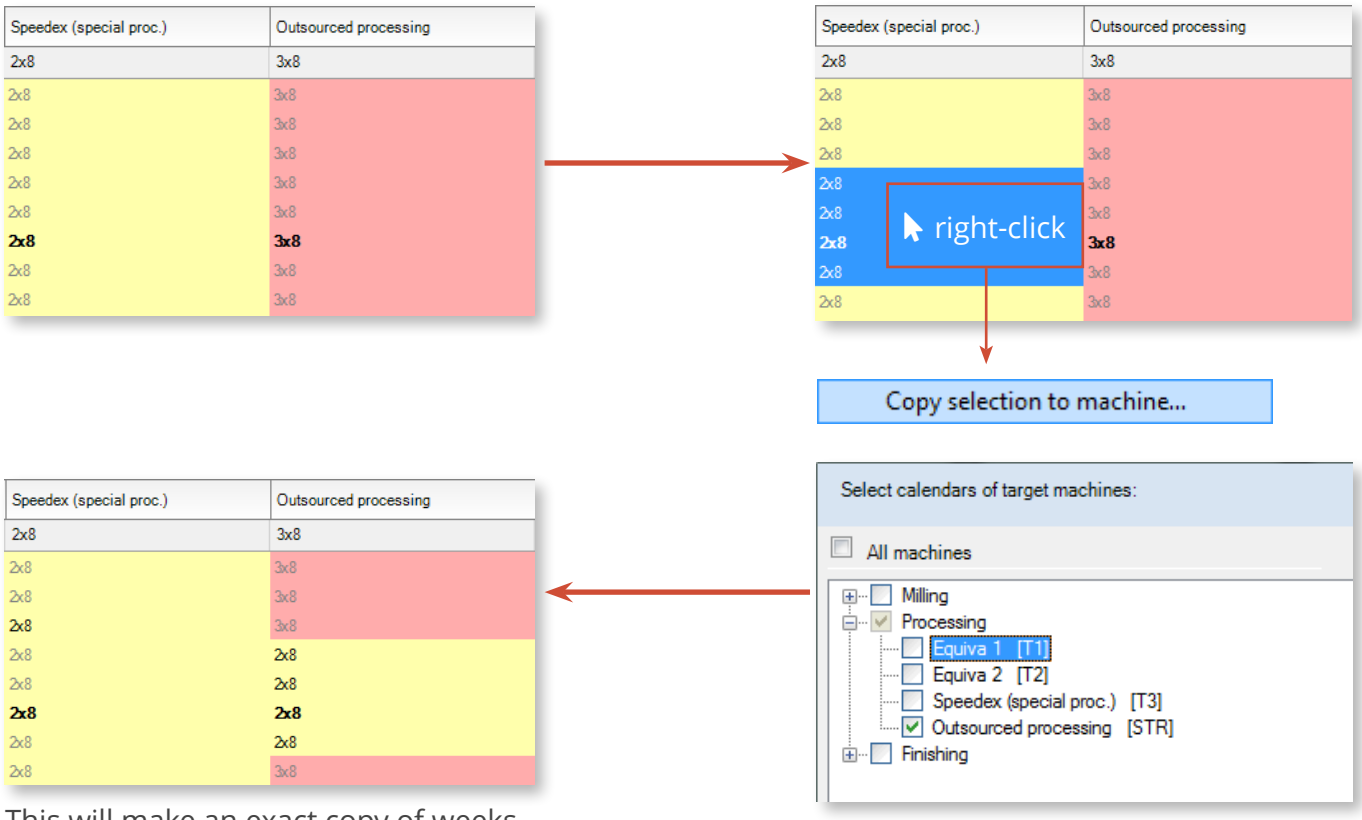

◄ You can move this window where you want in the general view of calendars.

# 5.5.7. Copying/pasting/deleting in the calendar

These operations mimic Windows standard functions, briefly reminded below:
Before any copy, you must select a cell or a range of cells to copy.
After selecting cells, the following operations are available:

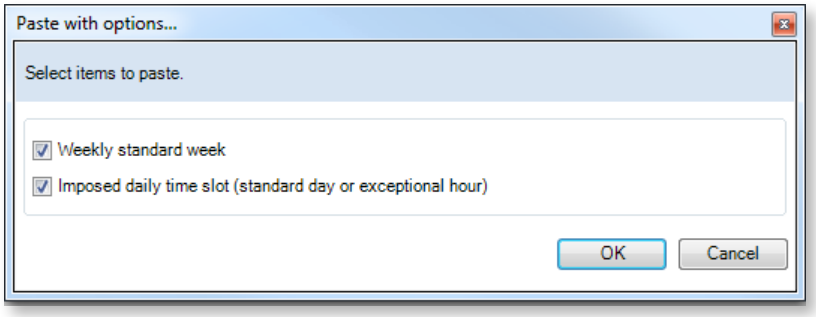
- Copy/paste selection: use Windows standard Ctrl+C/Ctrl+V shortcuts to copy/paste jobs quickly in your calendar. Otherwise, these actions are also available from the context menu on a cell.

- Copy selection to machine: if your selection covers only one machine, you can copy it to one or more other machines. Select the weeks and choose **Copy selection to machine** in the context menu:




This will make an exact copy of weeks

- Paste selection with options: this special paste function is available to choose the elements to paste:

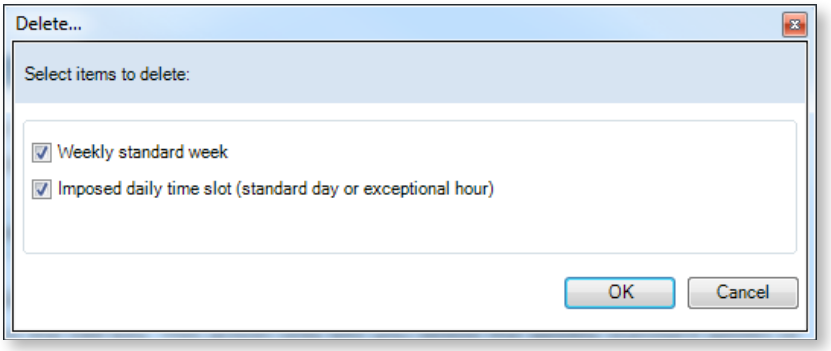



- Copy/paste the whole calendar of a machine: click on a column header to select the whole calendar of a machine. In the context menu, select **Copy calendar** or **Copy calendar to machine**. Then click

on the column header corresponding to the destination machine and click on **Paste calendar** or select directly the destination machine after clicking on **Copy calendar to machine**.

## Deleting calendar elements

Different options are available to delete calendar elements. The simplest way is to select the desired weeks/machines and press the **Del** key. This action only lets you delete the weekly standard weeks or the exceptional days/hours applied to the selection:




Checking these two options resets the week to the annual standard week.

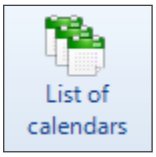
## Completely deleting a calendar

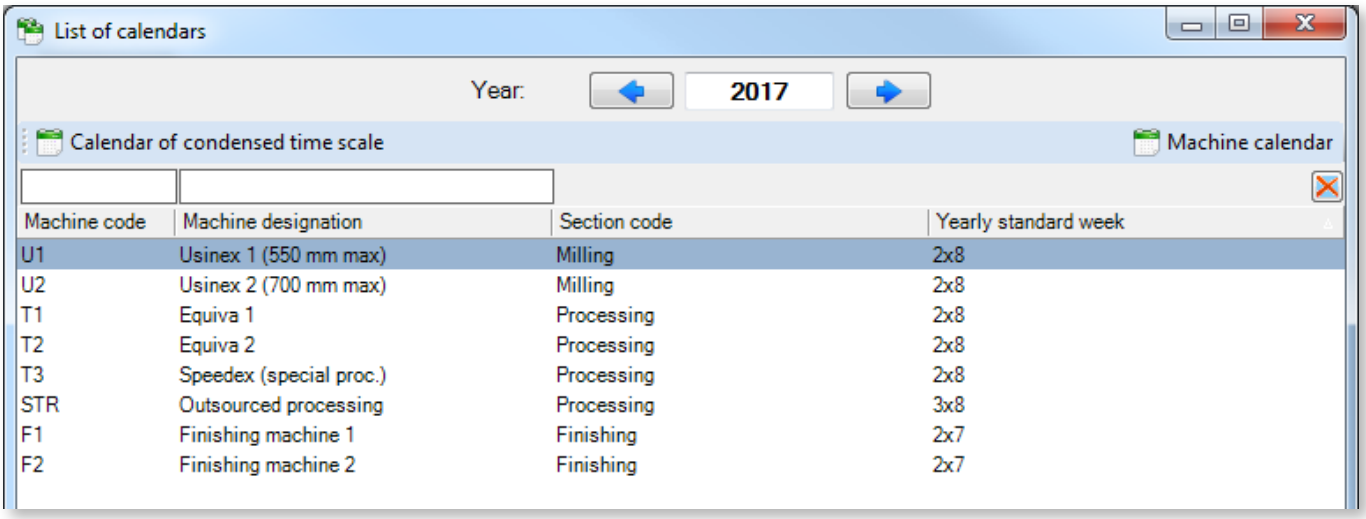
To delete the annual standard week of a machine and clear its calendar, right-click on the column header and choose **Delete annual standard week** > **< No imposed standard week >**. You will be asked to confirm.

**This operation cannot be cancelled!**

# 5.5.8. Displaying the list of calendars

Click on **List of calendars** under the **Calendars** tab of the ribbon to view the list of calendars:




The list of calendars displays all the calendars configured for each machine of your schedule. To view the calendar of a machine, select a machine and click on **Machine calendar**, thereby opening its **Detailed view** (see next section).

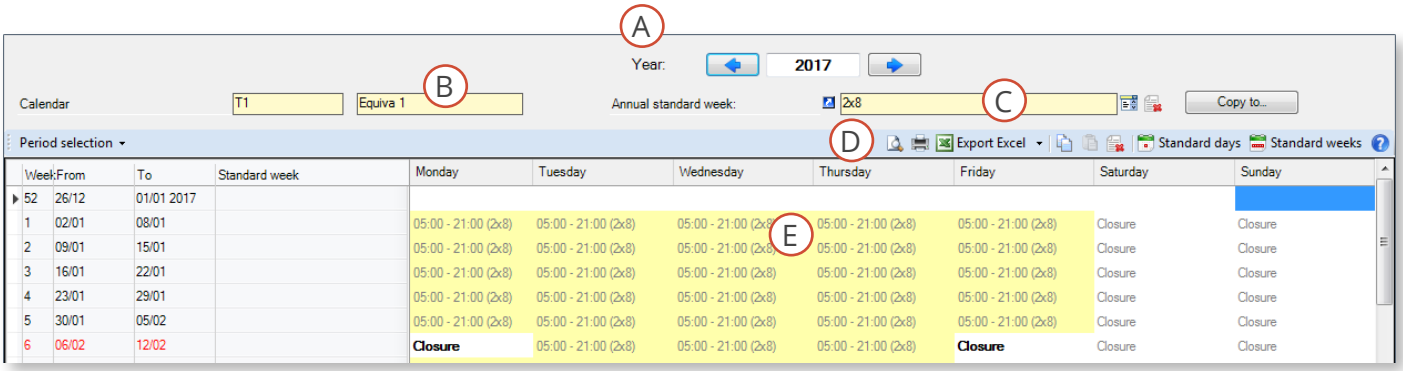
The list of calendars also enables you to view the **Calendar of condensed time scale**. This calendar defines the periods which will be hidden when selecting the **Compact time scale** option, under the **Display** tab.

This screen allows the definition of non working hours shared by all your machines, which need not be displayed. Therefore, the calendar of condensed time scale affects your company as a whole. The condensed time scale is configured the same way as standard calendars.

**Note**
Breaks affecting day shifts **are hidden** by the condensed time scale.
This preserves the existing behaviour when switching from Direct Planning 1 to a newer version of Direct Planning. Indeed, in this case, old working hours are all converted to day shifts, regardless of the actual hours.
On the other hand, breaks affecting Morning, Afternoon and Night shifts **are not hidden**.
This avoids having to create standard days and standard weeks dedicated to the condensed time scale.

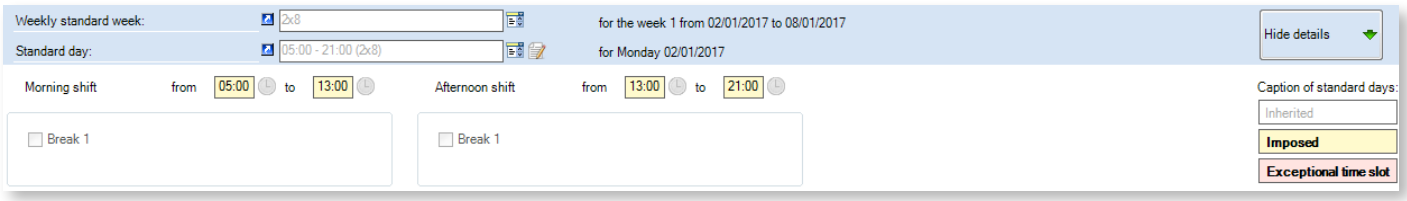
# 5.5.9. Detailed view

The detailed view offers an overall picture of a calendar (for a machine).
Each line of the table represents a week, whereas each column represents one of the 7 days of the week.
The background colour is directly linked with the colour of the standard week:




The upper part displays:

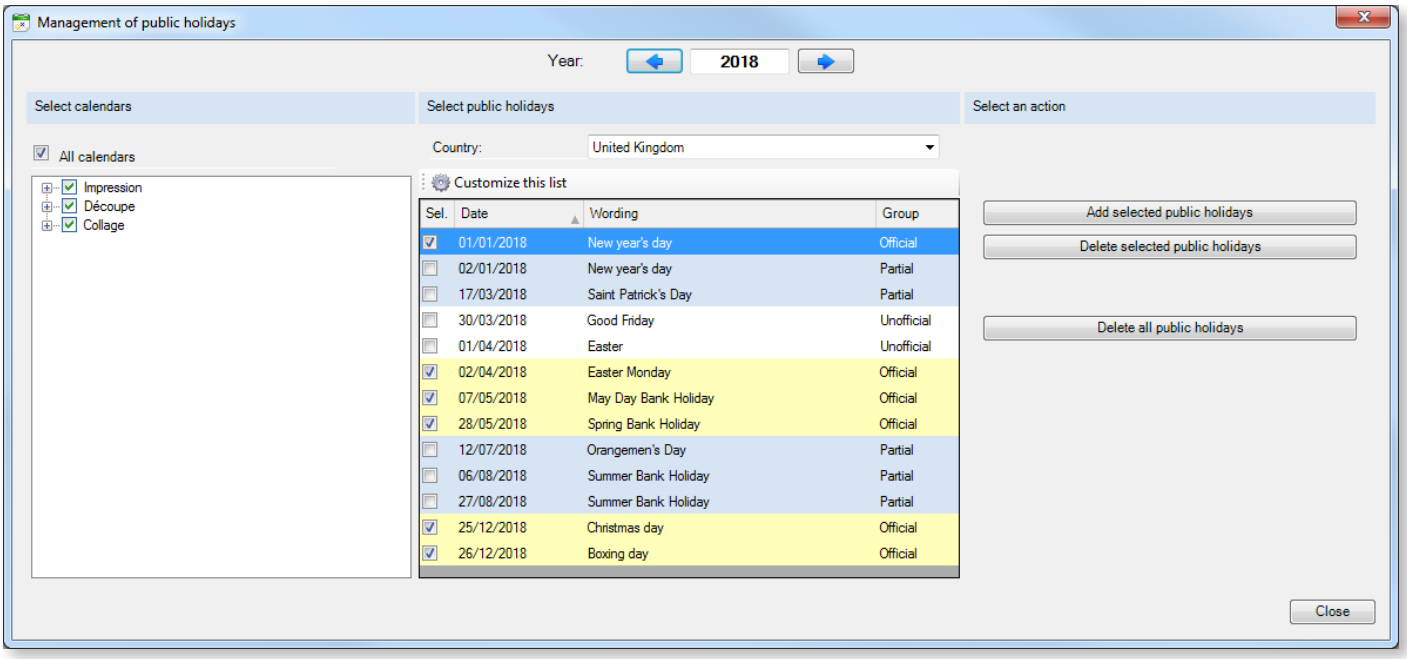
- The year of the calendar (A);
- The affected machine (B);
- The configured annual standard week (that you can modify, delete or copy to another machine) (C);
- The standard shortcut icons (D); and
- The calendar itself (E).




The lower part of the screen displays functions similar to those of the general view, with the ability to configure weekly standard weeks and exceptional standard days.
Graphic indications, summarised at the bottom right in the caption, are the same as in the general view.

# 5.5.10. Management of public holidays

Use this function to select public holidays for all or part of your machines.
It is available under the **Calendars** > **Management of public holidays** tab:



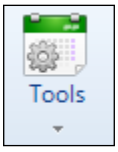

Follow these steps to add public holidays to your calendar:

1. Check that the year displayed is the current year. If needed, use left and right arrows to display the desired year or type it.
2. Select the relevant calendars. As a reminder, one machine = one calendar.
3. Then select the public holidays in the list.
   Above the list of public holidays, check that your country is displayed.
   If needed, open the dropdown list to change it.
   The background colour of days reflects their nature:
   - Yellow background: official public holidays, checked by default
   - Grey background: public holidays affecting only a portion of the territory, unchecked by default
   - White background: informal public holidays, unchecked by default
4. On the right, select **Add selected public holidays** to add them to the calendars of the related machines.

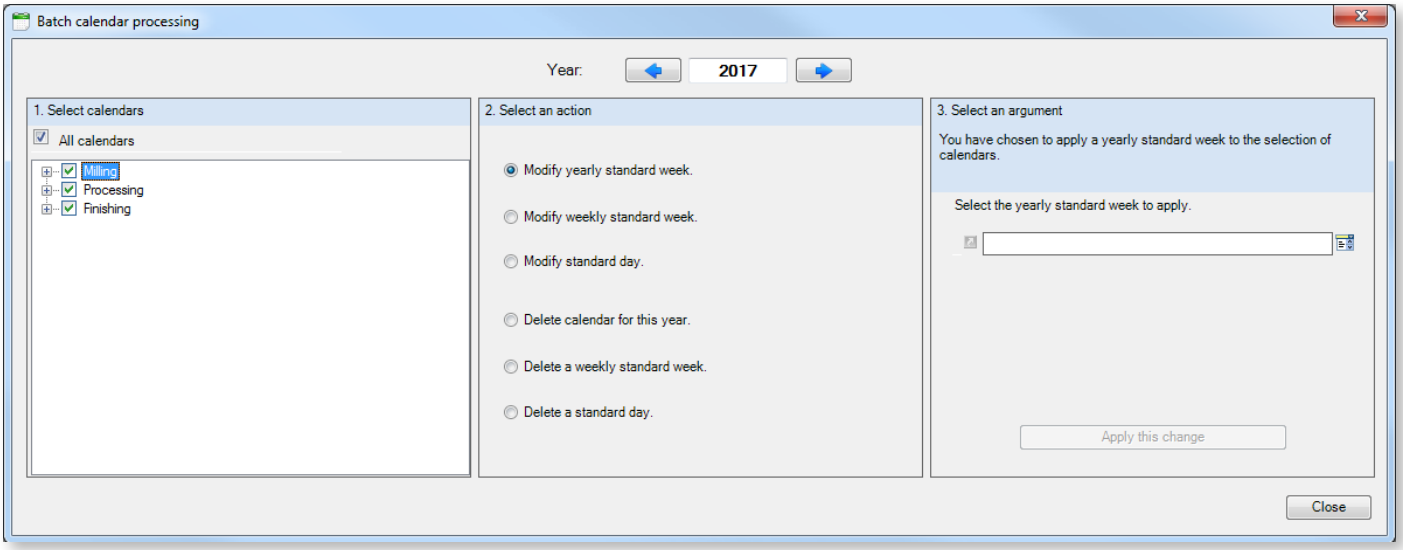
**Note**
The list of public holidays is not static: click on **Customize this list** to import, export, create, modify and delete public holidays.

# 5.5.11. Tools

The toolbox is available under the **Calendar** > **Tools** tab:



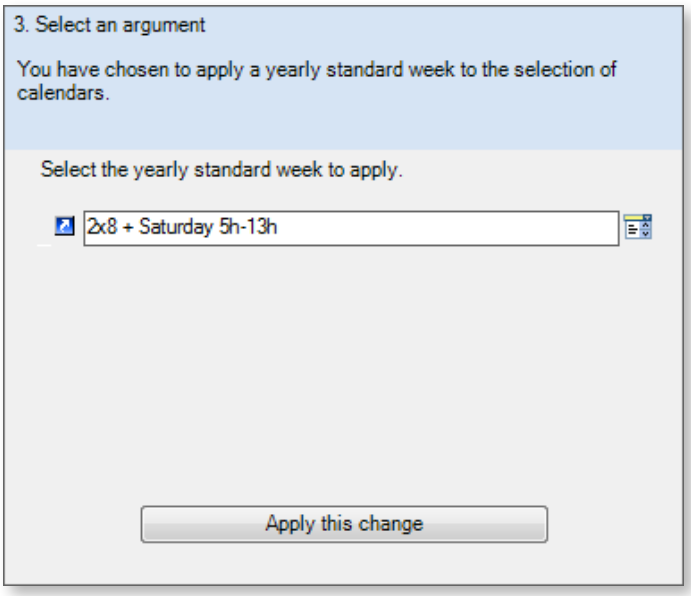

This menu offers the **Batch processing** to make mass actions on all or part of your calendars (modification or deletion of annual standard weeks, weekly standard weeks or standard days):



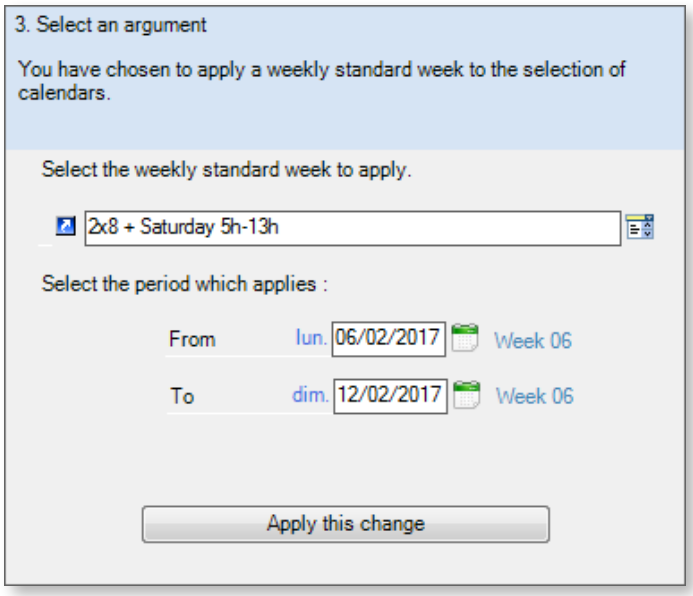

Follow the displayed sequence for batch processing:

0. Check that the year displayed is the current year.
1. Select the relevant calendars
2. Select an action to perform on the selected calendars
3. Enter the information required by the selected action:

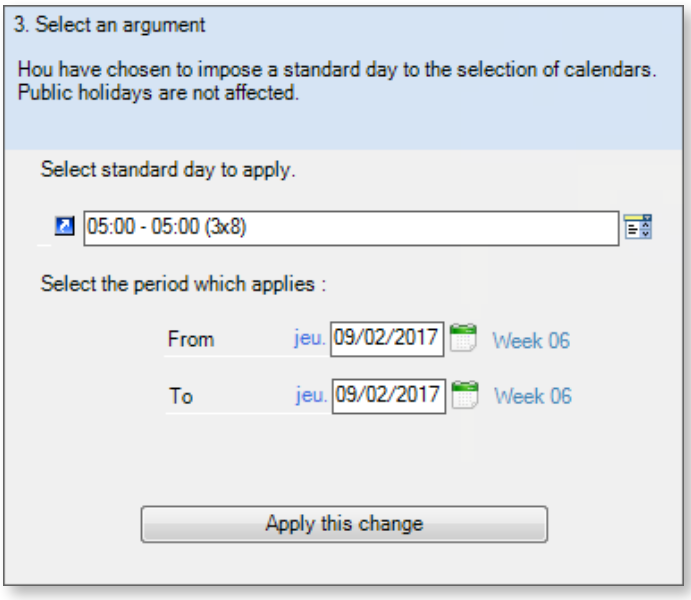
### Modify yearly standard week.



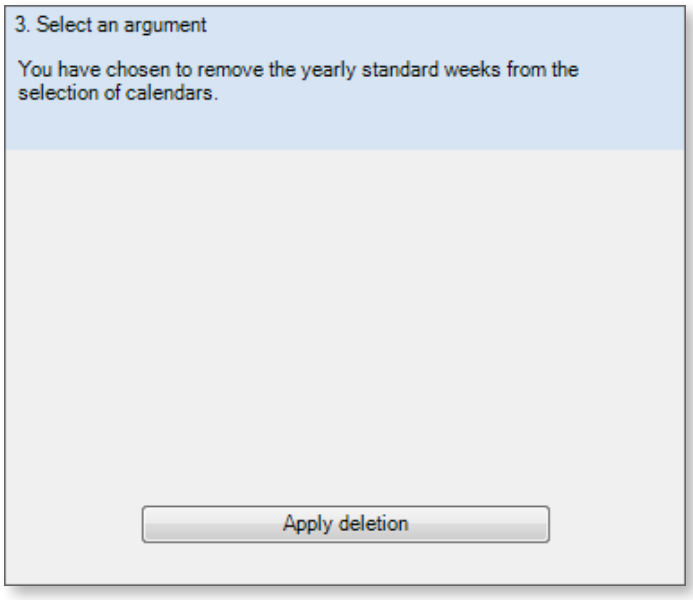

### Modify weekly standard week.



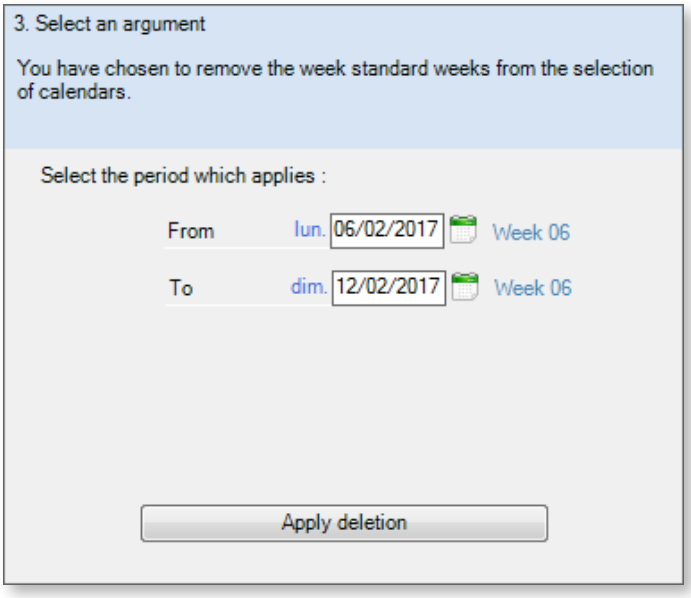
## Modify standard day.



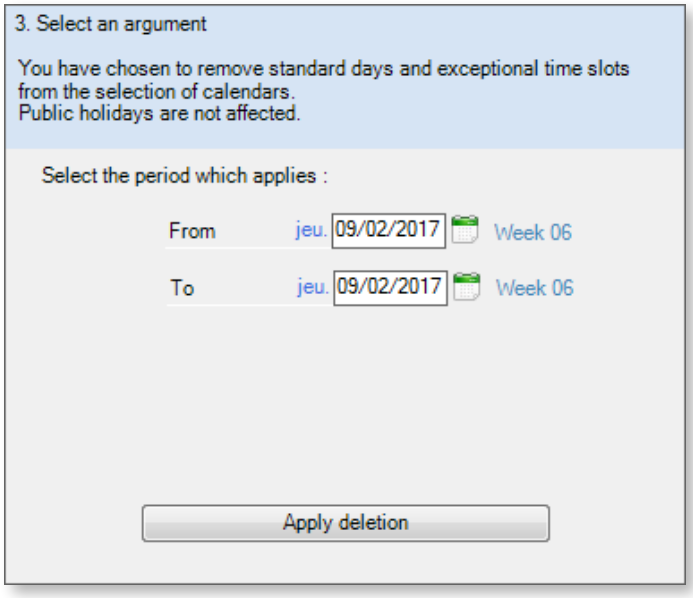

## Delete calendar for this year.




## Delete a weekly standard week.




## Delete a standard day.



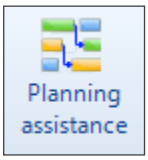
# 5.6. Planning assistance

Planning assistance encompasses a set of powerful tools to optimise the schedule while also respecting time constraints.
When planning assistance is active, Direct Planning applies the following rules to all jobs located within its scope.

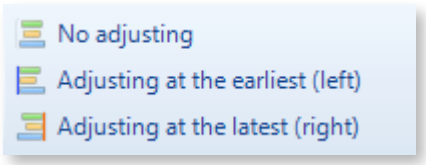
- Respect of route constraints: Within a route, Direct Planning automatically moves all jobs positioned downstream of the moved job in order to respect the precedence constraints. The respect of these constraints can also take into account the duration of gaps and overlaps.

- Jobs which started prematurely are automatically moved to start in time.

To enable planning assistance, click on **Planning assistance** in the ribbon and on the **Planning assistance** button:



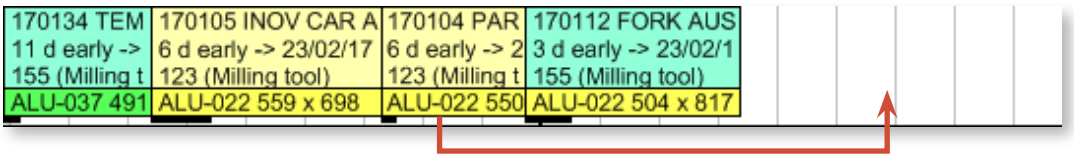

Direct Planning offers 3 adjustment options:



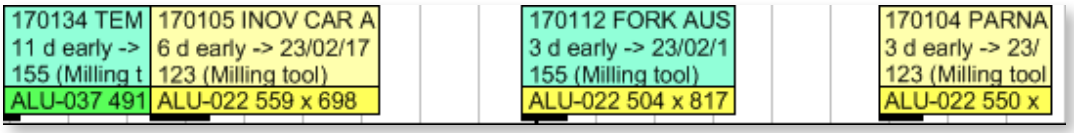

## 5.6.1. Planning assistance without adjustment

If you select this option, moving the job leave a gap behind it, which is not filled automatically. Similarly, the moved job is not automatically placed against the previous or following job:

**Before**




**After**



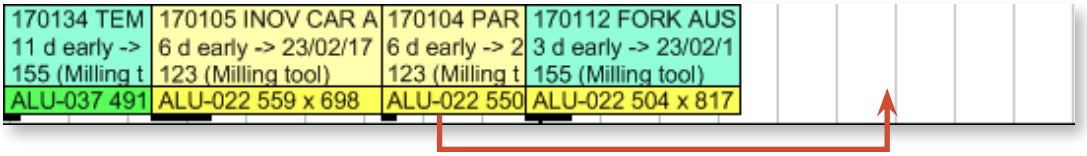

If the job belongs to a route, the movement also affects the other routed jobs on the same principles.

# 5.6.2. Planning assistance with adjustment

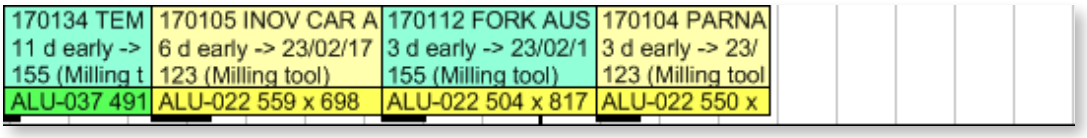
## Adjustment to the left

Adjustment at the earliest (to the left) is used to perform each job as soon as possible.
When active, unjustified gaps between 2 jobs of the same machine are shrunk in order to compact the schedule.
The following illustrates this:

**Before**




**After**



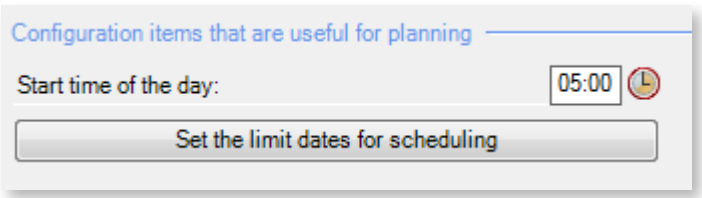

## Adjustment to the right

Adjustment to the right follows the same principle: jobs are moved as late as possible while also respecting time constraints.

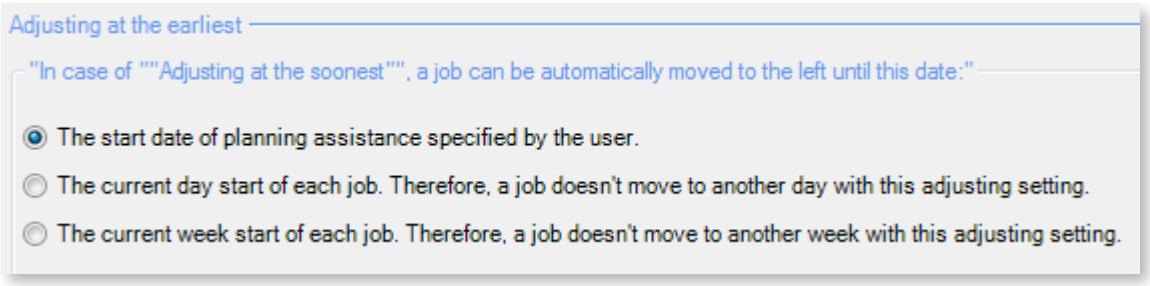
### ADMINISTRATION

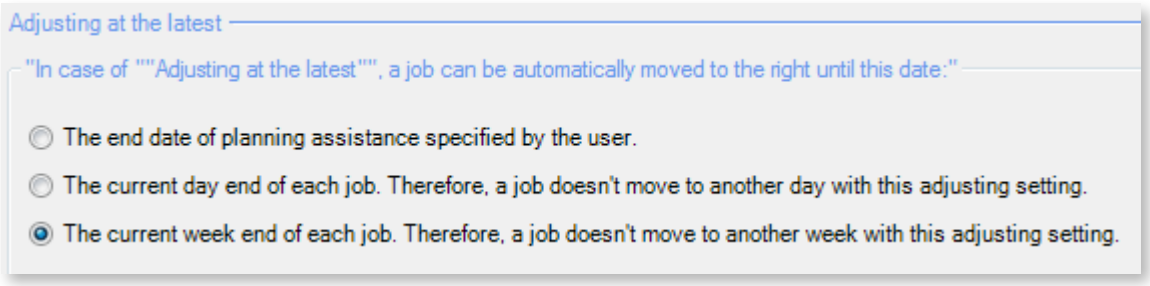
The administrator can define the behaviour of adjustment to the left/right in **General configuration** > **Planning assistance** in order to avoid jobs being thrown too far down the schedule.

Screen captures shown on the next page are derived from this screen.




◄ If you choose 05:00 as beginning of the day and limit the left adjustment to the day, then jobs will be pushed leftwards to 05:00.



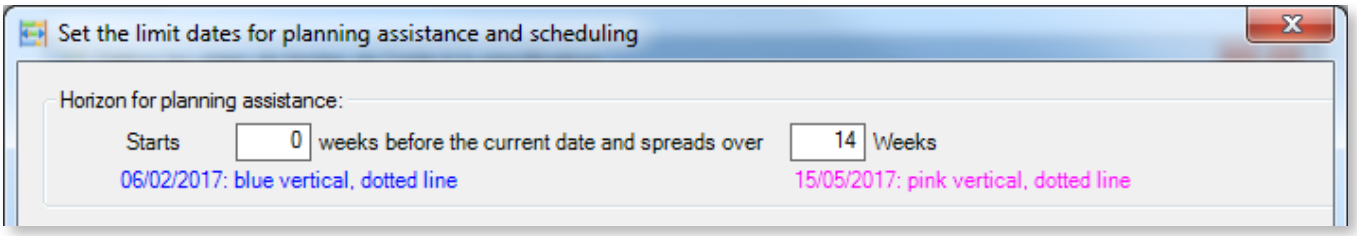

In the period covered by planning assistance, you can limit the adjustment of jobs at the earliest and latest. In both cases, you can limit the adjustment to the dates configured by the administrator (see next section), to the day or to the week.
These last two cases ensure you that a job will not leave the day or the week in which you affected it.

## Boundaries

To function, the planning assistance module needs boundaries defining the time scope of its operations. Therefore, the planning manager has to define these boundaries.
The planning assistance module will only process jobs included in this frame: jobs placed in the distant future will not be affected by planning assistance.

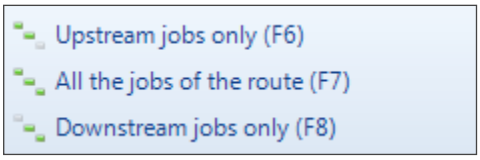
Moreover, we just saw that within this time frame, the administrator can limit the earliest/latest adjustment of jobs to the day or week. Without losing the optimisation offered by the adjustment of jobs, this will ensure you that a job will not leave the day or week to which you assigned it.

To define the boundaries of planning assistance, click on **Planning assistance** > **Set limit dates** in the ribbon:



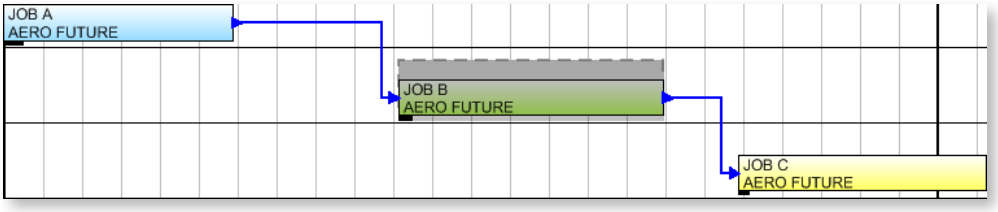
# 5.6.3. Movement with grouping

When moving jobs, users can ask for the jobs of the route to be grouped. This function is available under the **Planning assistance** tab of the ribbon:

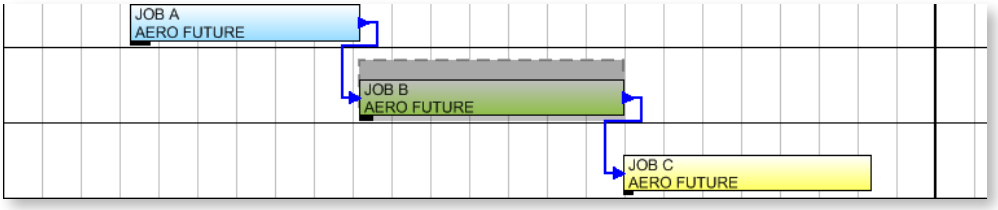



◄ Clicking on these options does not perform the actual movement but defines which jobs will remain grouped after the movement.

To move a job with route grouping, move the route while holding the Alt key.
In the following example, the movement with grouping is activated for All jobs of the route:



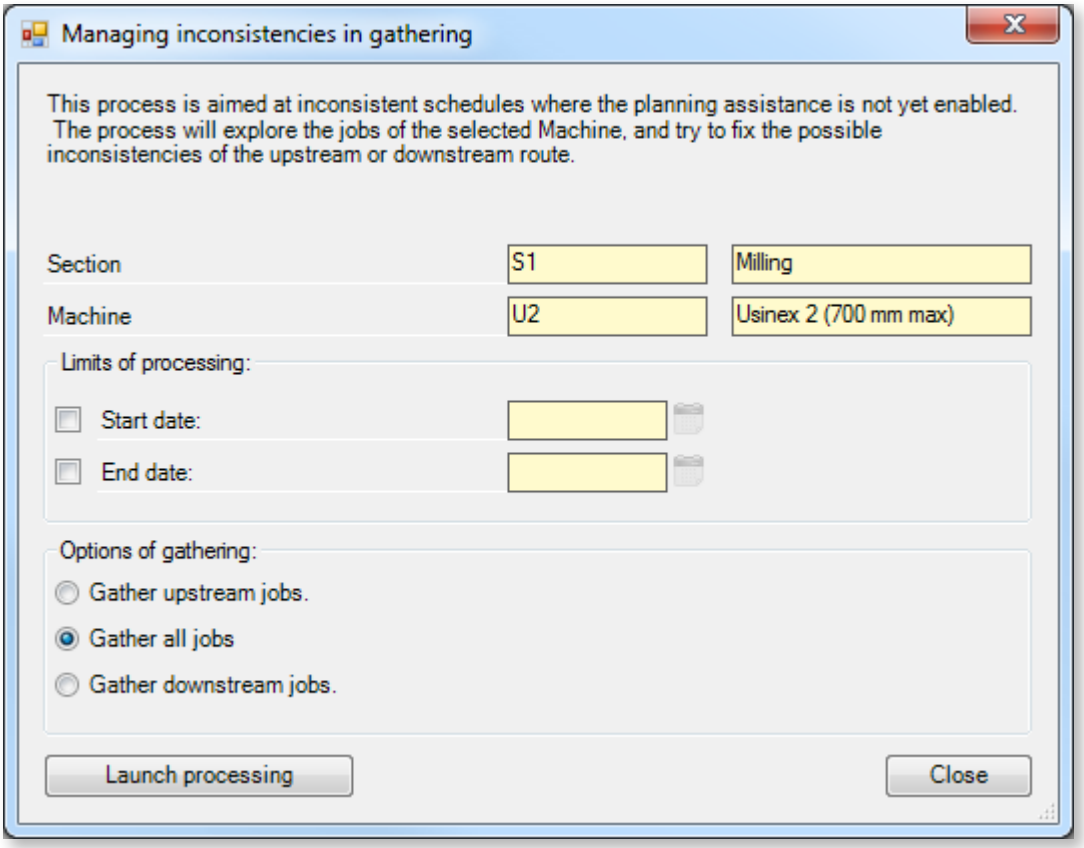

When moving job B (to the right or left) while holding Alt, the upstream (A) and downstream (C) jobs are moved as closed as possible to job B:




◄ Jobs belonging to the same route are grouped after a slight shift of job B to the left.

The grouping can also be performed without movement, by right clicking on the job and selecting **Gather the jobs of the route**.
You can also do it for all routes of a machine via the context menu of that machine. This grouping is particularly relevant for schedules which do not benefit from planning assistance. Uncontrolled inputs can lead to route inconsistencies which need rectification (for example when activating planning assistance).

At the machine level, the grouping of jobs is performed to **Fix route inconsistencies**, allowing also to enter the scope of grouping by typing start and end dates:


Managing inconsistencies in gathering
This process is aimed at inconsistent schedules where the planning assistance is not yet enabled.
The process will explore the jobs of the selected Machine, and try to fix the possible inconsistencies of the upstream or downstream route.
Section
S1
Milling
Machine
U2
Usinex 2 (700 mm max)
Limits of processing:
Start date:
End date:
Options of gathering:
Gather upstream jobs.
Gather all jobs
Gather downstream jobs.
Launch processing
Close

# 5.6.4. Workload histogram

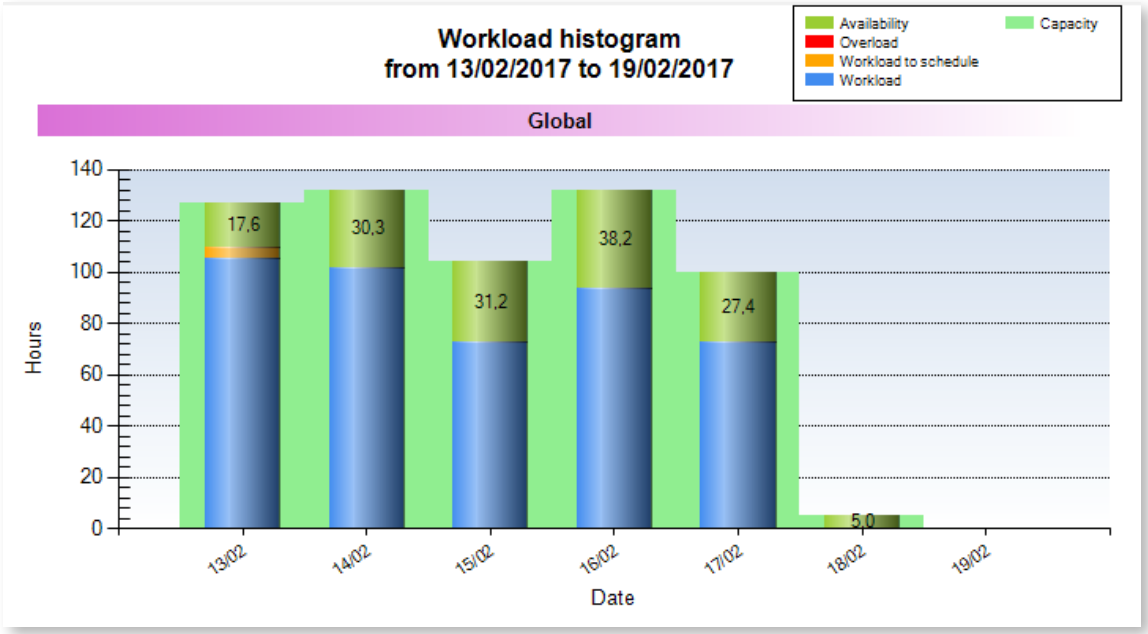
The workload histogram is used to analyse the workload and the capacity by machine and section. You have different possibilities to access it:

◄ **Planning assistance** tab in the ribbon

Right-click on a section ► Workload histogram of this section...

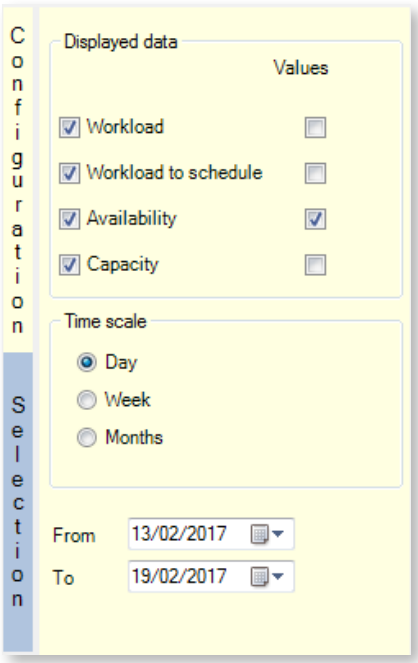
Right-click on a machine ► Workload histogram of this machine...

**Result:**




Right clicking on the histogram allows to copy/save/print the image.

The left of screen contains two tabs to configure the histogram: **Building** and **Selection**:




◄ **Workload**: displays the machine workload (in blue on the graph)

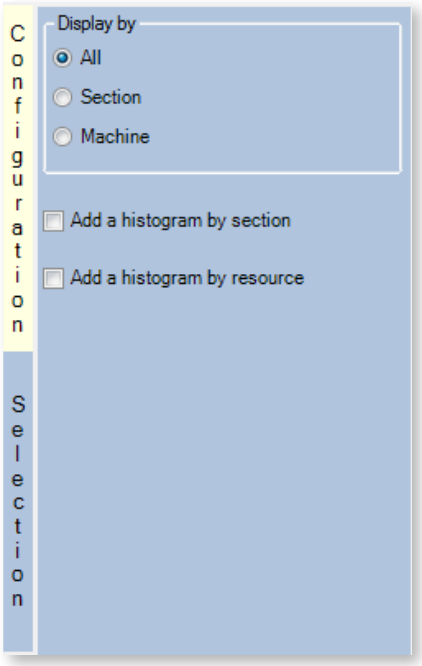
**Workload to schedule**: displays the workload to plan (in orange on the graph). The workload to schedule can only be displayed if the workload is also requested. The scheduled overload is also displayed (in red on the graph).

**Availability**: displays the machine idle time (in green on the graph).

**Capacity**: displays the total capacity of the machine (the green background on the graph).

Opposite to this information, check the **Values** box to display data with its respective values.

Choose the **Time scale** of the histogram by checking the corresponding button, as well as the period it covers.



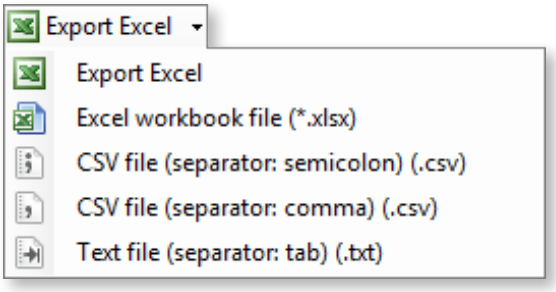

◄ Check one of the three buttons according to your choice:

**All** for an histogram encompassing all machines

**Section/Machine** to select the sections/machines included in the histogram.

Below, use the **Add a histogram by section** and **Add a histogram by resource** boxes to add histograms for each section/machine, in addition to the overall histogram (which will display at the bottom of the list)

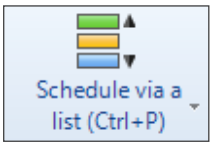
When you change the configuration of the histogram, do not forget to click on the **Refresh** button at the top left to update the graph.
In addition to the traditional buttons for previewing and printing the histogram, this area can also be used to perform an **Excel export** of the histogram in various formats:




**Note**
Whatever the format, the histogram is exported as data and not as a graph.

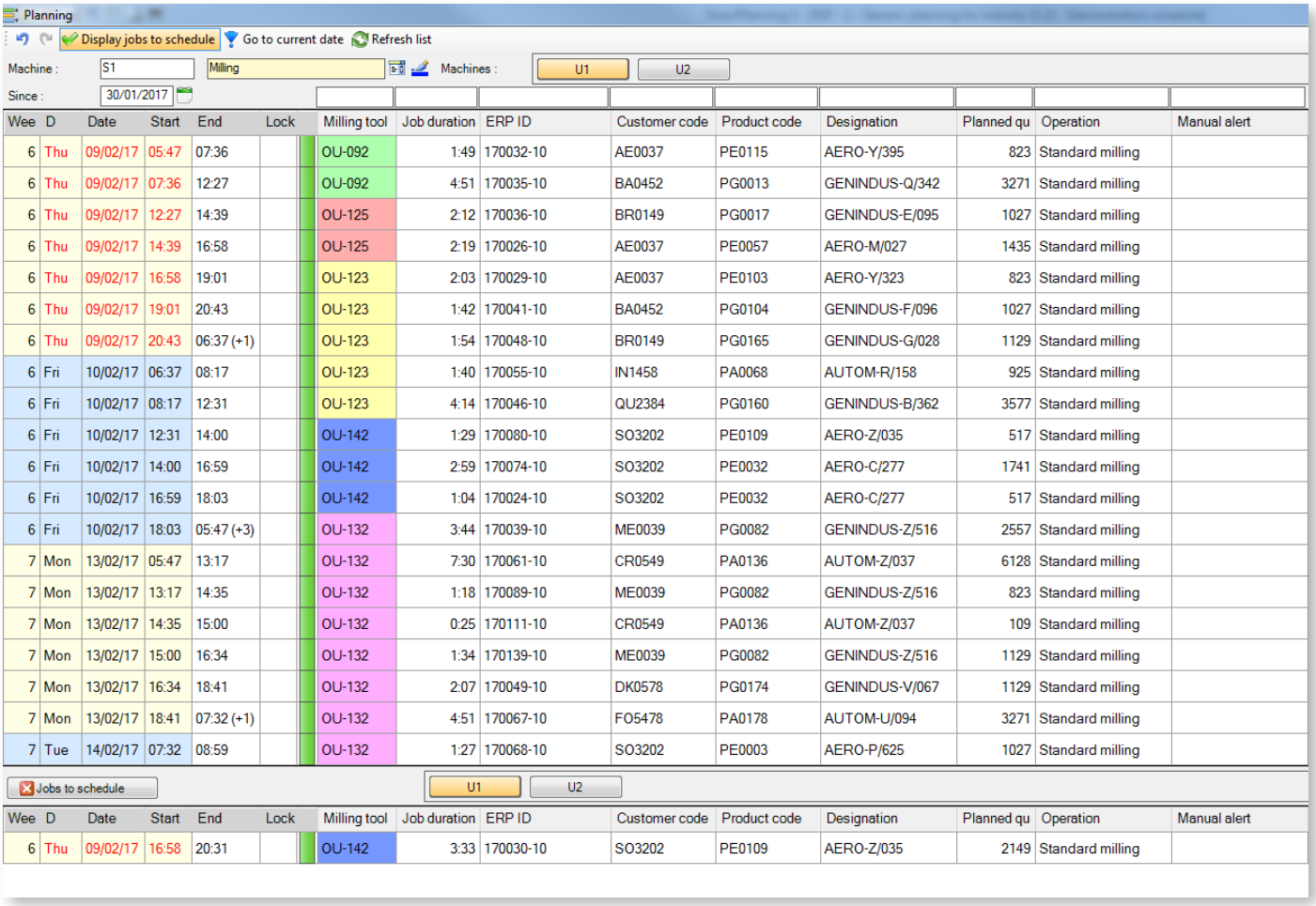
# 5.7. Planning with lists

This function is available from the ribbon, under the **Home** > **Schedule via a list** tab:




It is also available from various context menus (e.g. on the name of the machine to the left of the schedule) or by selecting a job and pressing Ctrl+P.

Planning with lists offers the ability to schedule jobs via vertical drag and drops in a special list, complementing the Gantt chart already used:




| Wee | D | Date | Start | End | Lock | Milling tool | Job duration | ERP ID | Customer code | Product code | Designation | Planned qu | Operation | Manual alert |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6 | Thu | 09/02/17 | 05:47 | 07:36 | | OU-092 | 1:49 | 170032-10 | AE0037 | PE0115 | AERO-Y/395 | 823 | Standard milling | |
| 6 | Thu | 09/02/17 | 07:36 | 12:27 | | OU-092 | 4:51 | 170035-10 | BA0452 | PG0013 | GENINDUS-Q/342 | 3271 | Standard milling | |
| 6 | Thu | 09/02/17 | 12:27 | 14:39 | | OU-125 | 2:12 | 170036-10 | BR0149 | PG0017 | GENINDUS-E/095 | 1027 | Standard milling | |
| 6 | Thu | 09/02/17 | 14:39 | 16:58 | | OU-125 | 2:19 | 170026-10 | AE0037 | PE0057 | AERO-M/027 | 1435 | Standard milling | |
| 6 | Thu | 09/02/17 | 16:58 | 19:01 | | OU-123 | 2:03 | 170029-10 | AE0037 | PE0103 | AERO-Y/323 | 823 | Standard milling | |
| 6 | Thu | 09/02/17 | 19:01 | 20:43 | | OU-123 | 1:42 | 170041-10 | BA0452 | PG0104 | GENINDUS-F/096 | 1027 | Standard milling | |
| 6 | Thu | 09/02/17 | 20:43 | 06:37 (+1) | | OU-123 | 1:54 | 170048-10 | BR0149 | PG0165 | GENINDUS-G/028 | 1129 | Standard milling | |
| 6 | Fri | 10/02/17 | 06:37 | 08:17 | | OU-123 | 1:40 | 170055-10 | IN1458 | PA0068 | AUTOM-R/158 | 925 | Standard milling | |
| 6 | Fri | 10/02/17 | 08:17 | 12:31 | | OU-123 | 4:14 | 170046-10 | QU2384 | PG0160 | GENINDUS-B/362 | 3577 | Standard milling | |
| 6 | Fri | 10/02/17 | 12:31 | 14:00 | | OU-142 | 1:29 | 170080-10 | SO3202 | PE0109 | AERO-Z/035 | 517 | Standard milling | |
| 6 | Fri | 10/02/17 | 14:00 | 16:59 | | OU-142 | 2:59 | 170074-10 | SO3202 | PE0032 | AERO-C/277 | 1741 | Standard milling | |
| 6 | Fri | 10/02/17 | 16:59 | 18:03 | | OU-142 | 1:04 | 170024-10 | SO3202 | PE0032 | AERO-C/277 | 517 | Standard milling | |
| 6 | Fri | 10/02/17 | 18:03 | 05:47 (+3) | | OU-132 | 3:44 | 170039-10 | ME0039 | PG0082 | GENINDUS-Z/516 | 2557 | Standard milling | |
| 7 | Mon | 13/02/17 | 05:47 | 13:17 | | OU-132 | 7:30 | 170061-10 | CR0549 | PA0136 | AUTOM-Z/037 | 6128 | Standard milling | |
| 7 | Mon | 13/02/17 | 13:17 | 14:35 | | OU-132 | 1:18 | 170089-10 | ME0039 | PG0082 | GENINDUS-Z/516 | 823 | Standard milling | |
| 7 | Mon | 13/02/17 | 14:35 | 15:00 | | OU-132 | 0:25 | 170111-10 | CR0549 | PA0136 | AUTOM-Z/037 | 109 | Standard milling | |
| 7 | Mon | 13/02/17 | 15:00 | 16:34 | | OU-132 | 1:34 | 170139-10 | ME0039 | PG0082 | GENINDUS-Z/516 | 1129 | Standard milling | |
| 7 | Mon | 13/02/17 | 16:34 | 18:41 | | OU-132 | 2:07 | 170049-10 | DK0578 | PG0174 | GENINDUS-V/067 | 1129 | Standard milling | |
| 7 | Mon | 13/02/17 | 18:41 | 07:32 (+1) | | OU-132 | 4:51 | 170067-10 | FO5478 | PA0178 | AUTOM-U/094 | 3271 | Standard milling | |
| 7 | Tue | 14/02/17 | 07:32 | 08:59 | | OU-132 | 1:27 | 170068-10 | SO3202 | PE0003 | AERO-P/625 | 1027 | Standard milling | |

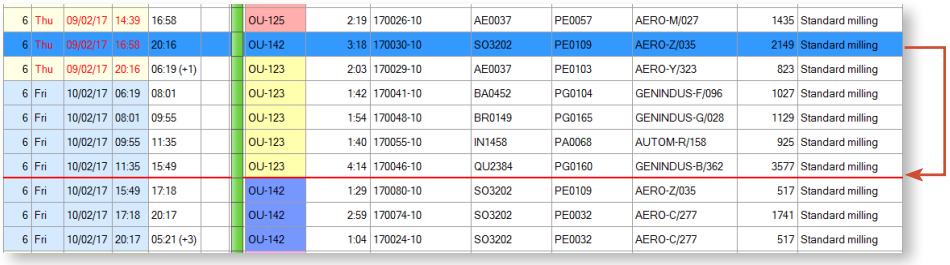
| Wee | D | Date | Start | End | Lock | Milling tool | Job duration | ERP ID | Customer code | Product code | Designation | Planned qu | Operation | Manual alert |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6 | Thu | 09/02/17 | 16:58 | 20:31 | | OU-142 | 3:33 | 170030-10 | SO3202 | PE0109 | AERO-Z/035 | 2149 | Standard milling | |

On the left, this window features a few standard columns which cannot be modified. On the right, columns can customised for this shop floor section (by right-clicking the column header). This way, technical data helpful to job scheduling can be displayed as columns.

For any section, the background colour of columns **End** and **Lckd** (Locked) can be customised to reflect for instance important technical data for this section. You may also colour another column of your choice. In the example above, colouring by milling tool optimises the schedule through grouping of jobs

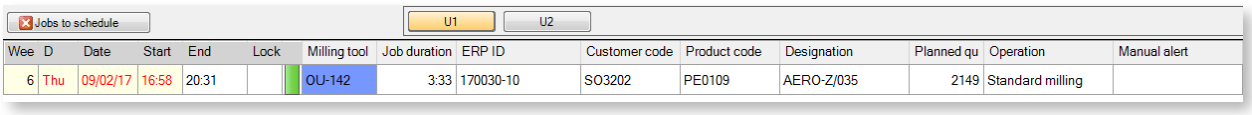
sharing the same tool.

In these lists, you can select one or more jobs and place them where you want via drag and drop. A coloured line indicates whether the job being moved is placed before (green) or after (red) the destination job:



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6 | Thu | 09/02/17 | 14:39 | 16:58 | | OU-125 | 2:19 | 170026-10 | AE0037 | PE0057 | AERO-M/027 | 1435 | Standard milling |
| 6 | Thu | 09/02/17 | 16:58 | 20:16 | | OU-142 | 3:18 | 170030-10 | SO3202 | PE0109 | AERO-Z/035 | 2149 | Standard milling |
| 6 | Thu | 09/02/17 | 20:16 | 06:19 (+1) | | OU-123 | 2:03 | 170029-10 | AE0037 | PE0103 | AERO-Y/323 | 823 | Standard milling |
| 6 | Fri | 10/02/17 | 06:19 | 08:01 | | OU-123 | 1:42 | 170041-10 | BA0452 | PG0104 | GENINDUS-F/096 | 1027 | Standard milling |
| 6 | Fri | 10/02/17 | 08:01 | 09:55 | | OU-123 | 1:54 | 170048-10 | BR0149 | PG0165 | GENINDUS-G/028 | 1129 | Standard milling |
| 6 | Fri | 10/02/17 | 09:55 | 11:35 | | OU-123 | 1:40 | 170055-10 | IN1458 | PA0068 | AUTOM-R/158 | 925 | Standard milling |
| 6 | Fri | 10/02/17 | 11:35 | 15:49 | | OU-123 | 4:14 | 170046-10 | QU2384 | PG0160 | GENINDUS-B/362 | 3577 | Standard milling |
| 6 | Fri | 10/02/17 | 15:49 | 17:18 | | OU-142 | 1:29 | 170080-10 | SO3202 | PE0109 | AERO-Z/035 | 517 | Standard milling |
| 6 | Fri | 10/02/17 | 17:18 | 20:17 | | OU-142 | 2:59 | 170074-10 | SO3202 | PE0032 | AERO-C/277 | 1741 | Standard milling |
| 6 | Fri | 10/02/17 | 20:17 | 05:21 (+3) | | OU-142 | 1:04 | 170024-10 | SO3202 | PE0032 | AERO-C/277 | 517 | Standard milling |

The lower part of this screen displays the jobs to schedule for this machine:



Jobs to schedule | U1 | U2

| Wee | D | Date | Start | End | Lock | Milling tool | Job duration | ERP ID | Customer code | Product code | Designation | Planned qu | Operation | Manual alert |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6 | Thu | 09/02/17 | 16:58 | 20:31 | | OU-142 | 3:33 | 170030-10 | SO3202 | PE0109 | AERO-Z/035 | 2149 | Standard milling | |

In that zone, the **U1** and **U2** buttons represent the machine codes. They are used to toggle between machines, both in the list of scheduled jobs or jobs to schedule.

Clicking in the table also selects the job in the Gantt and conversely (please note that in the example below, jobs are greyed out for readability purposes and not because of a processing by Direct Planning):

| | | | | | | |
|---|---|---|---|---|---|---|
| 6 | Thu | 09/02/17 | 07:36 | 12:27 | | OU-092 |
| 6 | Thu | 09/02/17 | 12:27 | 14:39 | | OU-125 |
| 6 | Thu | 09/02/17 | 14:39 | 16:58 | | OU-125 |
| 6 | Thu | 09/02/17 | 16:58 | 19:01 | | OU-123 |
| 6 | Thu | 09/02/17 | 19:01 | 20:43 | | OU-123 |

Double-clicking in the list centres the Gantt by focusing on that job.

In the list, a column of green pictograms shows whether jobs are grouped in the schedule or separated by gaps.

| | |
|---|---|
| | Jobs grouped |
| | Jobs not grouped |

This list is not designed to be opened all the time because managing both the list and the Gantt inevitably extends response times.

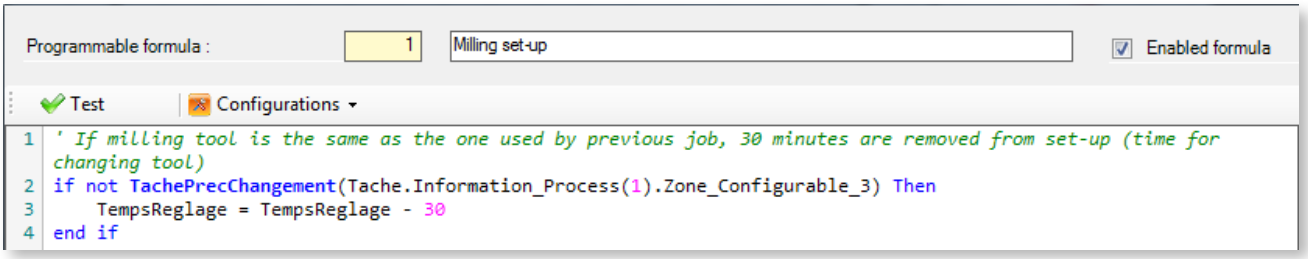
# 5.8. Optimising planning times

As discussed, planning assistance can group jobs belonging to a route. This section covers a slightly different topic: grouping jobs sharing technical characteristics in order to optimise setting times. First, the planning manager wants to be able to identify quickly these jobs and, second, to group them in order to optimise times.

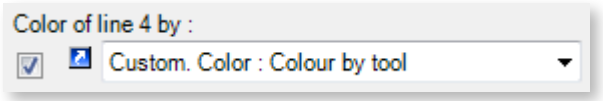
Let's take the example of jobs requiring specific tools whose changes result in time losses.

## Administration

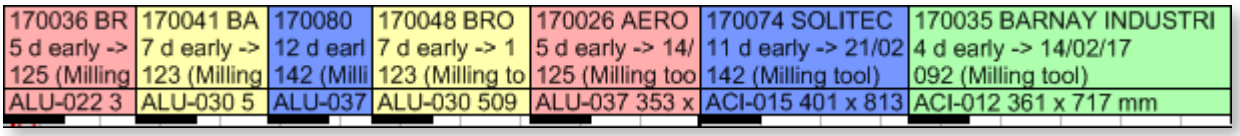
To optimise this schedule, let's first create a formula reflecting the fact that the setting time is reduced when the same tool is used for the previous job (**Configuration** > **Setting time**):



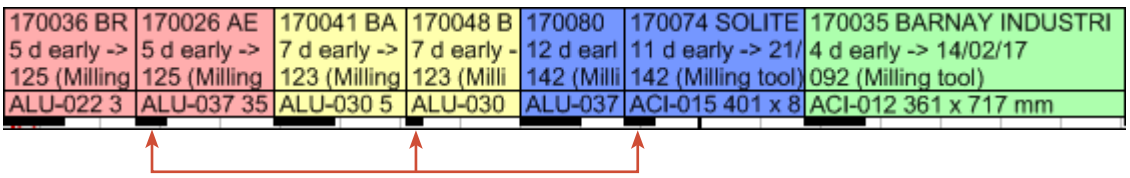

Then, the last line of tickets is configured to have its colour reflect the tool number (**Configuration** > **Display modes**):




This results in the following display (before optimisation):




The planning manager now has to group jobs sharing the same colour in order to shorten setting times, materialised below by the black bottom bar:



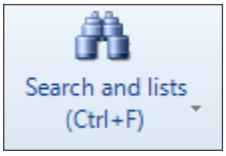

## Our advice

To tailor the configuration to your business needs, please contact the Volume Software team.

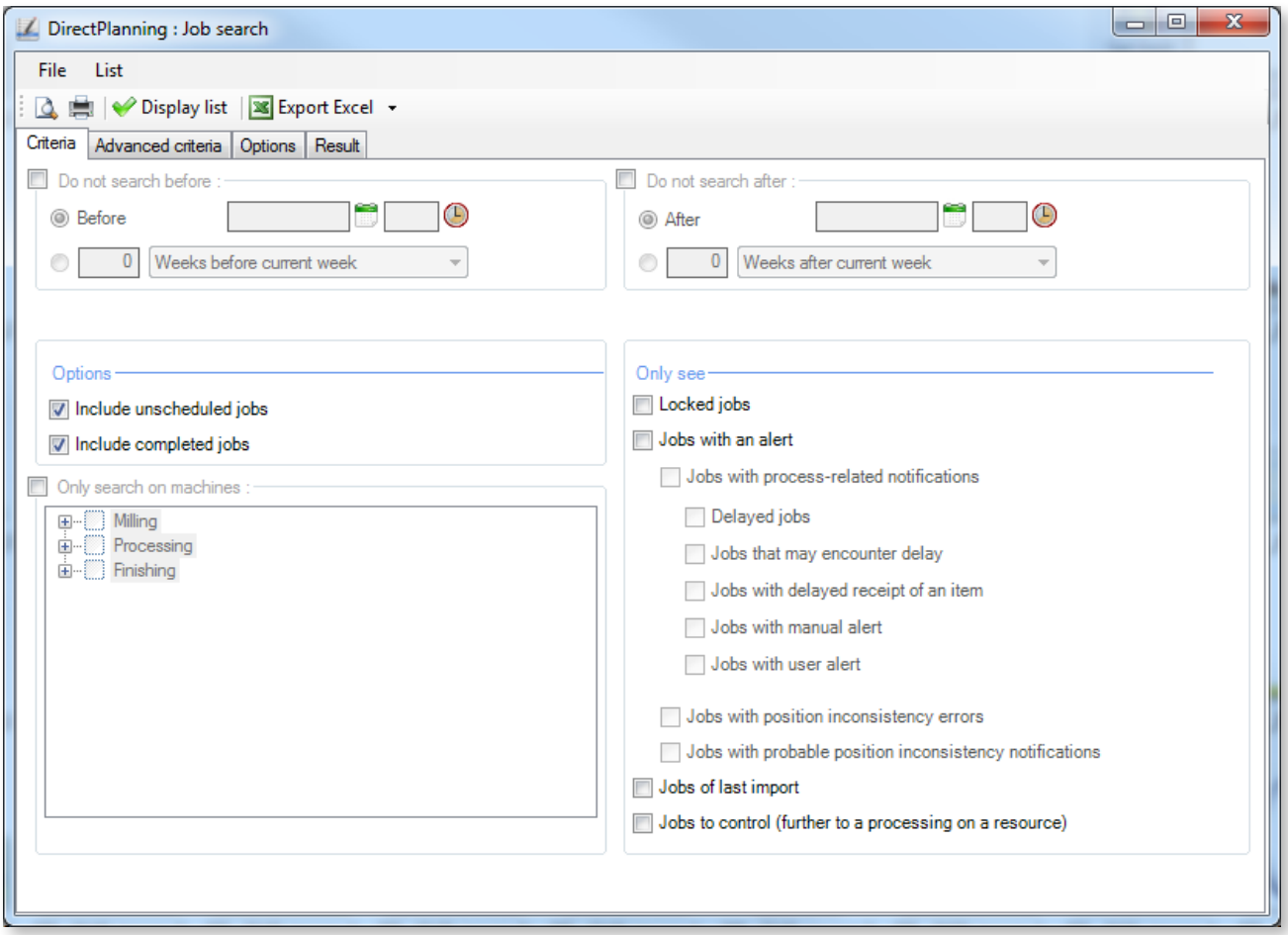
# 5.9. Searching jobs

## 5.9.1. Search

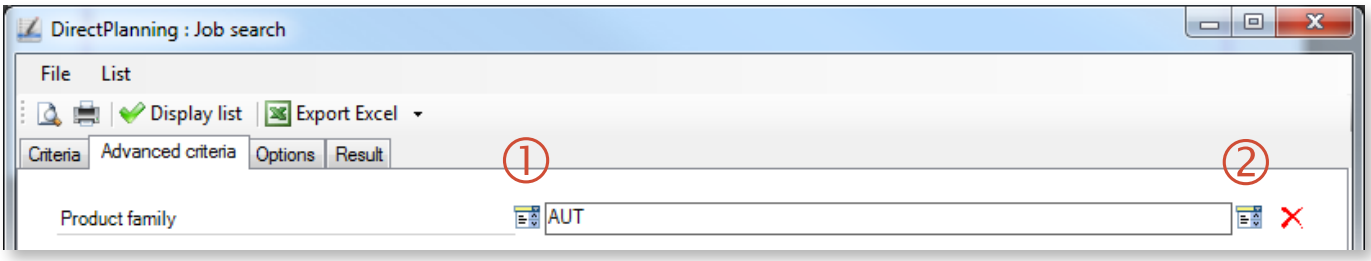
Multiple methods can be used to find jobs quickly. The typical way is to access the **Home** tab of the ribbon and click on **Search and lists:**



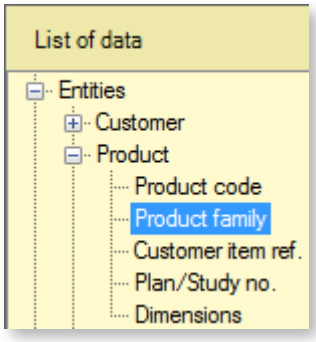

◄ This button is split in 2:
Upper part: opens the search screen
Lower part: opens the list selection/creation screen (if you have the required permissions)



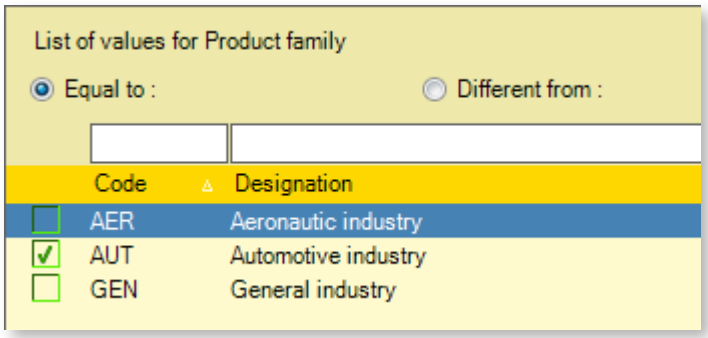

The first tab allows the entry of basic search criteria (for example by setting time boundaries in the upper part).
It also offers the ability to select different job filters based on their status (**Option** zone), their type (**Only see** zone) or the machine which they depend on (**Only search on machines** zone).
If you do not set any criteria before clicking on **Display list**, Direct Planning will display all scheduled jobs.
If basic criteria are not sufficient, you can refine your search by clicking on the **Advanced criteria** tab.



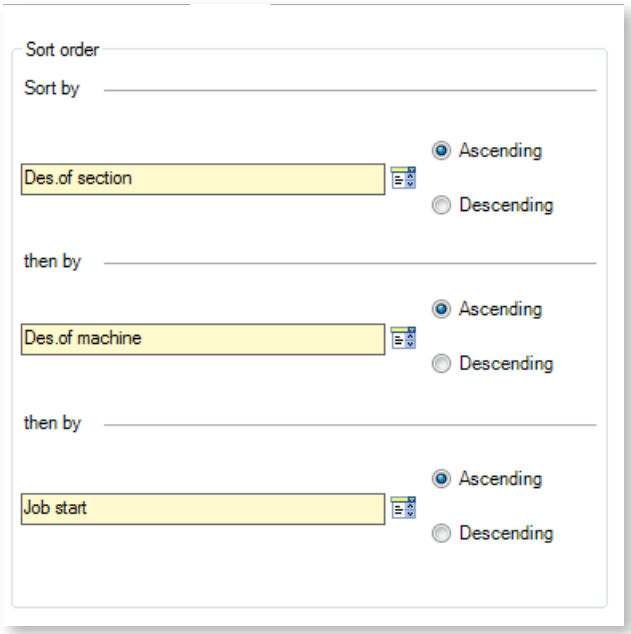

① Choose a first filter




② Choose a second filter refining the first

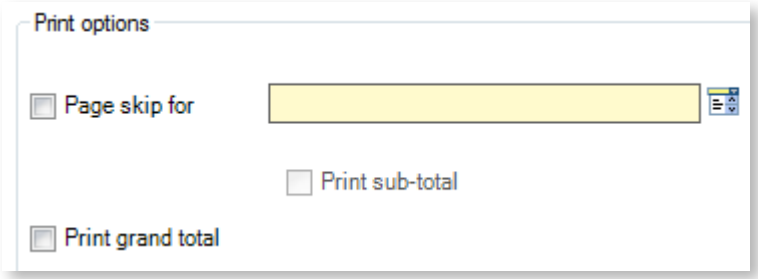



To customise the result window, click on the **Options** tab.

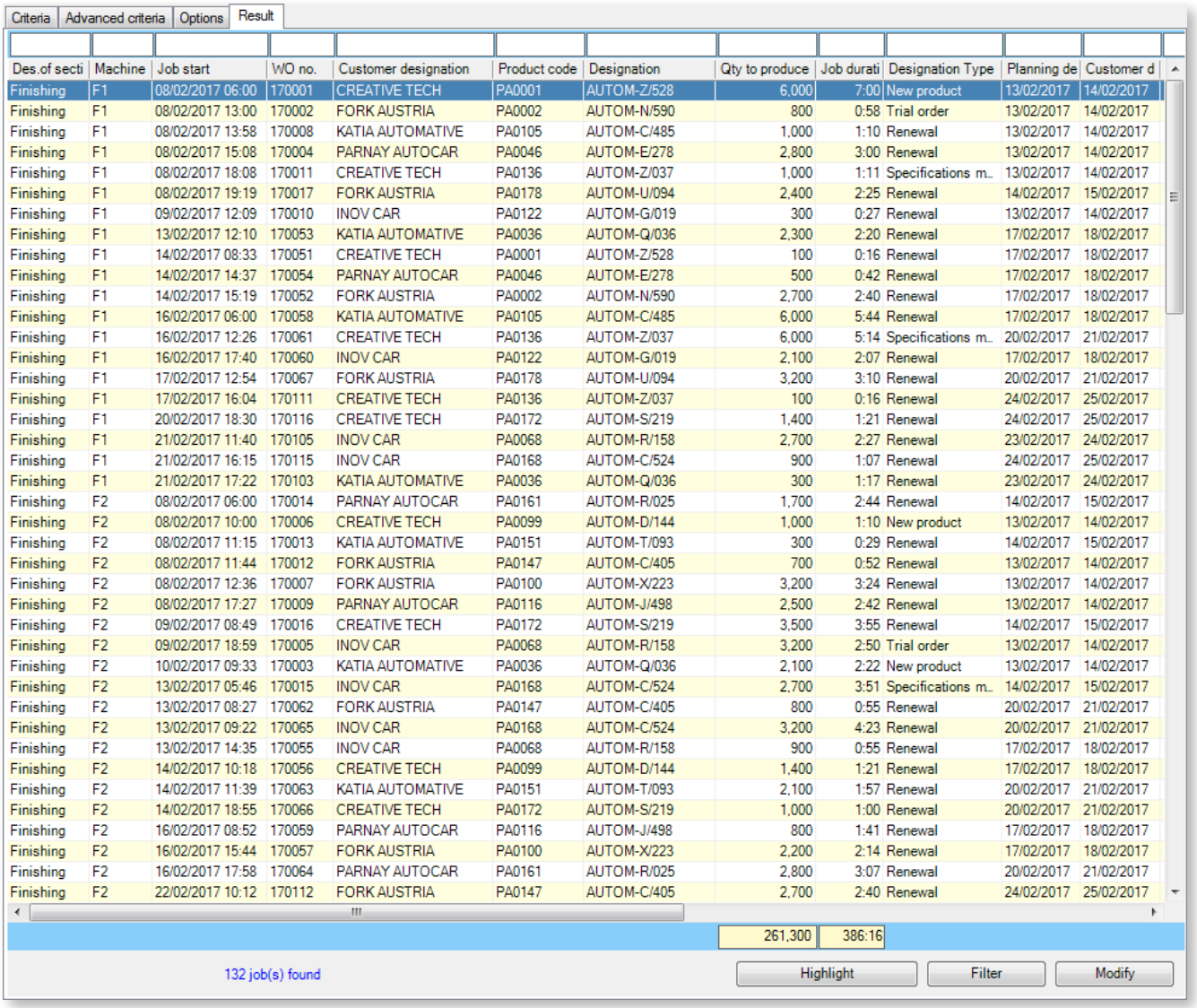



◀ The left side of this window offers the ability to define the sorting order of the results, with the possibility to apply an ascending or descending order for each of the 3 hierarchical levels.

The right side of the window offers the ability to define the printing options for the list of results: page break and total/subtotal printing ▼



To display the list of jobs matching your criteria, click on **Display list**. The list of matching jobs displays under the **Result** tab:




| Des.of secti | Machine | Job start | WO no. | Customer designation | Product code | Designation | Qty to produce | Job durati | Designation Type | Planning de | Customer d |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Finishing | F1 | 08/02/2017 06:00 | 170001 | CREATIVE TECH | PA0001 | AUTOM-Z/528 | 6,000 | 7:00 | New product | 13/02/2017 | 14/02/2017 |
| Finishing | F1 | 08/02/2017 13:00 | 170002 | FORK AUSTRIA | PA0002 | AUTOM-N/590 | 800 | 0:58 | Trial order | 13/02/2017 | 14/02/2017 |
| Finishing | F1 | 08/02/2017 13:58 | 170008 | KATIA AUTOMATIVE | PA0105 | AUTOM-C/485 | 1,000 | 1:10 | Renewal | 13/02/2017 | 14/02/2017 |
| Finishing | F1 | 08/02/2017 15:08 | 170004 | PARNAY AUTOCAR | PA0046 | AUTOM-E/278 | 2,800 | 3:00 | Renewal | 13/02/2017 | 14/02/2017 |
| Finishing | F1 | 08/02/2017 18:08 | 170011 | CREATIVE TECH | PA0136 | AUTOM-Z/037 | 1,000 | 1:11 | Specifications m... | 13/02/2017 | 14/02/2017 |
| Finishing | F1 | 08/02/2017 19:19 | 170017 | FORK AUSTRIA | PA0178 | AUTOM-U/094 | 2,400 | 2:25 | Renewal | 14/02/2017 | 15/02/2017 |
| Finishing | F1 | 09/02/2017 12:09 | 170010 | INOV CAR | PA0122 | AUTOM-G/019 | 300 | 0:27 | Renewal | 13/02/2017 | 14/02/2017 |
| Finishing | F1 | 13/02/2017 12:10 | 170053 | KATIA AUTOMATIVE | PA0036 | AUTOM-Q/036 | 2,300 | 2:20 | Renewal | 17/02/2017 | 18/02/2017 |
| Finishing | F1 | 14/02/2017 08:33 | 170051 | CREATIVE TECH | PA0001 | AUTOM-Z/528 | 100 | 0:16 | Renewal | 17/02/2017 | 18/02/2017 |
| Finishing | F1 | 14/02/2017 14:37 | 170054 | PARNAY AUTOCAR | PA0046 | AUTOM-E/278 | 500 | 0:42 | Renewal | 17/02/2017 | 18/02/2017 |
| Finishing | F1 | 14/02/2017 15:19 | 170052 | FORK AUSTRIA | PA0002 | AUTOM-N/590 | 2,700 | 2:40 | Renewal | 17/02/2017 | 18/02/2017 |
| Finishing | F1 | 16/02/2017 06:00 | 170058 | KATIA AUTOMATIVE | PA0105 | AUTOM-C/485 | 6,000 | 5:44 | Renewal | 17/02/2017 | 18/02/2017 |
| Finishing | F1 | 16/02/2017 12:26 | 170061 | CREATIVE TECH | PA0136 | AUTOM-Z/037 | 6,000 | 5:14 | Specifications m... | 20/02/2017 | 21/02/2017 |
| Finishing | F1 | 16/02/2017 17:40 | 170060 | INOV CAR | PA0122 | AUTOM-G/019 | 2,100 | 2:07 | Renewal | 17/02/2017 | 18/02/2017 |
| Finishing | F1 | 17/02/2017 12:54 | 170067 | FORK AUSTRIA | PA0178 | AUTOM-U/094 | 3,200 | 3:10 | Renewal | 20/02/2017 | 21/02/2017 |
| Finishing | F1 | 17/02/2017 16:04 | 170111 | CREATIVE TECH | PA0136 | AUTOM-Z/037 | 100 | 0:16 | Renewal | 24/02/2017 | 25/02/2017 |
| Finishing | F1 | 20/02/2017 18:30 | 170116 | CREATIVE TECH | PA0172 | AUTOM-S/219 | 1,400 | 1:21 | Renewal | 24/02/2017 | 25/02/2017 |
| Finishing | F1 | 21/02/2017 11:40 | 170105 | INOV CAR | PA0068 | AUTOM-R/158 | 2,700 | 2:27 | Renewal | 23/02/2017 | 24/02/2017 |
| Finishing | F1 | 21/02/2017 16:15 | 170115 | INOV CAR | PA0168 | AUTOM-C/524 | 900 | 1:07 | Renewal | 24/02/2017 | 25/02/2017 |
| Finishing | F1 | 21/02/2017 17:22 | 170103 | KATIA AUTOMATIVE | PA0036 | AUTOM-Q/036 | 300 | 1:17 | Renewal | 23/02/2017 | 24/02/2017 |
| Finishing | F2 | 08/02/2017 06:00 | 170014 | PARNAY AUTOCAR | PA0161 | AUTOM-R/025 | 1,700 | 2:44 | Renewal | 14/02/2017 | 15/02/2017 |
| Finishing | F2 | 08/02/2017 10:00 | 170006 | CREATIVE TECH | PA0099 | AUTOM-D/144 | 1,000 | 1:10 | New product | 13/02/2017 | 14/02/2017 |
| Finishing | F2 | 08/02/2017 11:15 | 170013 | KATIA AUTOMATIVE | PA0151 | AUTOM-T/093 | 300 | 0:29 | Renewal | 14/02/2017 | 15/02/2017 |
| Finishing | F2 | 08/02/2017 11:44 | 170012 | FORK AUSTRIA | PA0147 | AUTOM-C/405 | 700 | 0:52 | Renewal | 13/02/2017 | 14/02/2017 |
| Finishing | F2 | 08/02/2017 12:36 | 170007 | FORK AUSTRIA | PA0100 | AUTOM-X/223 | 3,200 | 3:24 | Renewal | 13/02/2017 | 14/02/2017 |
| Finishing | F2 | 08/02/2017 17:27 | 170009 | PARNAY AUTOCAR | PA0116 | AUTOM-J/498 | 2,500 | 2:42 | Renewal | 13/02/2017 | 14/02/2017 |
| Finishing | F2 | 09/02/2017 08:49 | 170016 | CREATIVE TECH | PA0172 | AUTOM-S/219 | 3,500 | 3:55 | Renewal | 14/02/2017 | 15/02/2017 |
| Finishing | F2 | 09/02/2017 18:59 | 170005 | INOV CAR | PA0068 | AUTOM-R/158 | 3,200 | 2:50 | Trial order | 13/02/2017 | 14/02/2017 |
| Finishing | F2 | 10/02/2017 09:33 | 170003 | KATIA AUTOMATIVE | PA0036 | AUTOM-Q/036 | 2,100 | 2:22 | New product | 13/02/2017 | 14/02/2017 |
| Finishing | F2 | 13/02/2017 05:46 | 170015 | INOV CAR | PA0168 | AUTOM-C/524 | 2,700 | 3:51 | Specifications m... | 14/02/2017 | 15/02/2017 |
| Finishing | F2 | 13/02/2017 08:27 | 170062 | FORK AUSTRIA | PA0147 | AUTOM-C/405 | 800 | 0:55 | Renewal | 20/02/2017 | 21/02/2017 |
| Finishing | F2 | 13/02/2017 09:22 | 170065 | INOV CAR | PA0168 | AUTOM-C/524 | 3,200 | 4:23 | Renewal | 20/02/2017 | 21/02/2017 |
| Finishing | F2 | 13/02/2017 14:35 | 170055 | INOV CAR | PA0068 | AUTOM-R/158 | 900 | 0:55 | Renewal | 17/02/2017 | 18/02/2017 |
| Finishing | F2 | 14/02/2017 10:18 | 170056 | CREATIVE TECH | PA0099 | AUTOM-D/144 | 1,400 | 1:21 | Renewal | 17/02/2017 | 18/02/2017 |
| Finishing | F2 | 14/02/2017 11:39 | 170063 | KATIA AUTOMATIVE | PA0151 | AUTOM-T/093 | 2,100 | 1:57 | Renewal | 20/02/2017 | 21/02/2017 |
| Finishing | F2 | 14/02/2017 18:55 | 170066 | CREATIVE TECH | PA0172 | AUTOM-S/219 | 1,000 | 1:00 | Renewal | 20/02/2017 | 21/02/2017 |
| Finishing | F2 | 16/02/2017 08:52 | 170059 | PARNAY AUTOCAR | PA0116 | AUTOM-J/498 | 800 | 1:41 | Renewal | 17/02/2017 | 18/02/2017 |
| Finishing | F2 | 16/02/2017 15:44 | 170057 | FORK AUSTRIA | PA0100 | AUTOM-X/223 | 2,200 | 2:14 | Renewal | 17/02/2017 | 18/02/2017 |
| Finishing | F2 | 16/02/2017 17:58 | 170064 | PARNAY AUTOCAR | PA0161 | AUTOM-R/025 | 2,800 | 3:07 | Renewal | 20/02/2017 | 21/02/2017 |
| Finishing | F2 | 22/02/2017 10:12 | 170112 | FORK AUSTRIA | PA0147 | AUTOM-C/405 | 2,700 | 2:40 | Renewal | 24/02/2017 | 25/02/2017 |

From this search result window, multiple actions are available:

- Use the filters located above the column headers.
- Select the job by double-clicking on the corresponding line.
- Access quickly common actions by right-clicking on a job.
- Highlight found jobs by clicking **Highlight** at the bottom of the window.
- Filter found jobs by clicking the **Filter** button at the bottom of the window, or use the **Filter this value** function via right-click on a cell to quickly add/delete a filter.

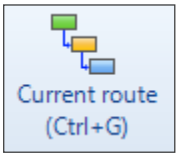
If possible and set in the options, a counter displays the column totals.

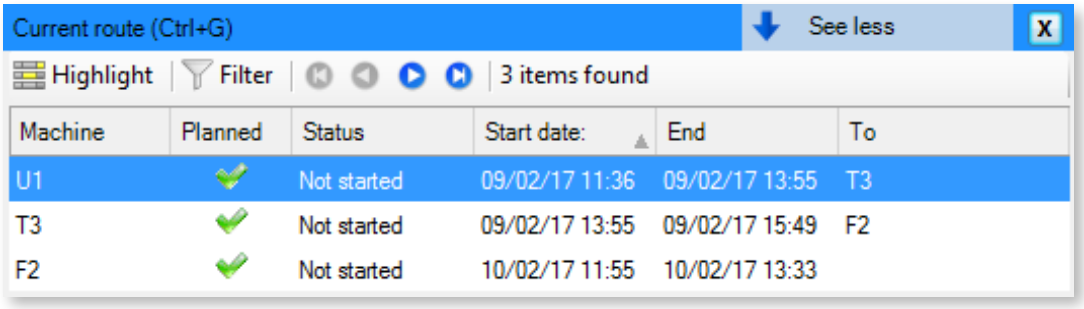
## Quick search

To find jobs quickly, right-click on a machine/section and select the **Search on this machine/section** action. This opens the window above and displays by default all jobs scheduled for this machine/section.

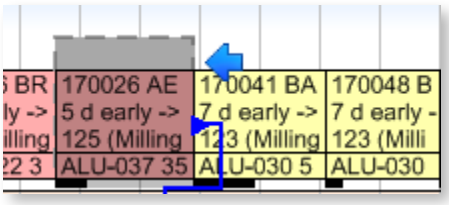
# 5.9.2. Current route

From the **Home** tab of the ribbon, the **Current route** button (Ctrl+ G) opens a small window which can be moved anywhere. This window can be minimized by clicking **See less** or by double-clicking on the header:



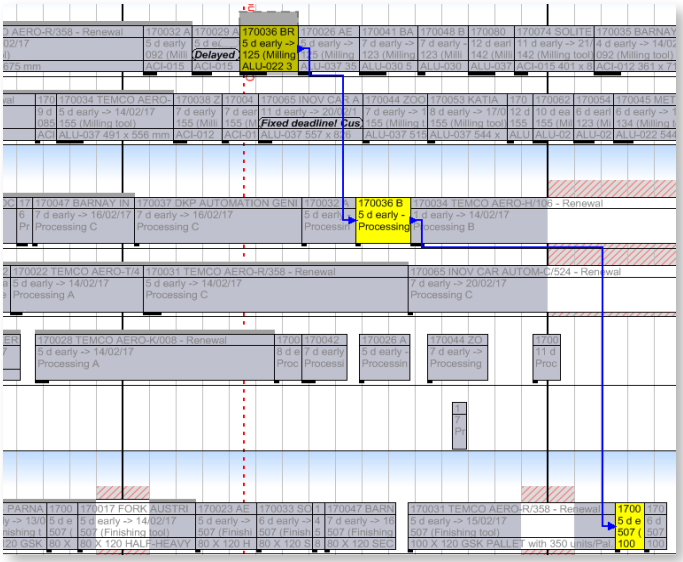




When selecting a job in the schedule, this window displays all jobs belonging to the same route.

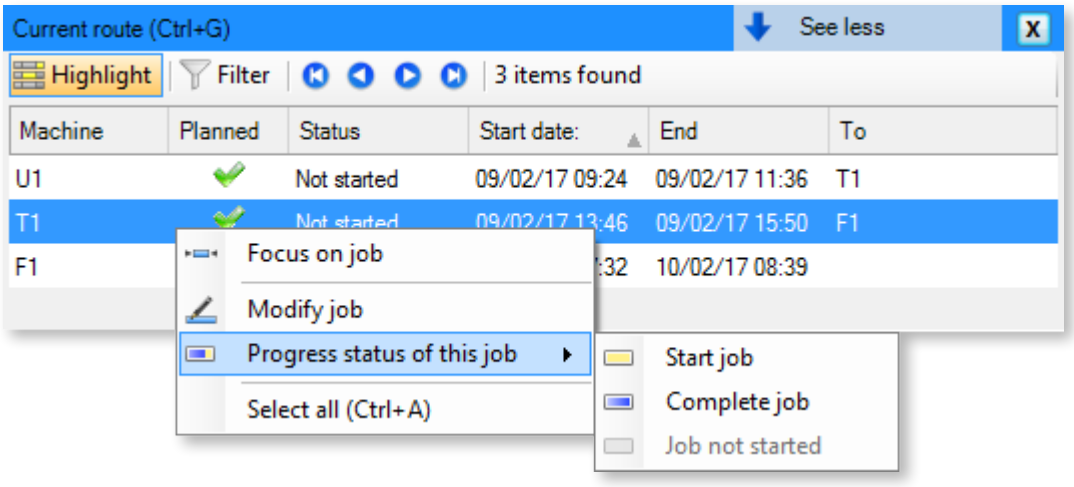



◄ Double-click in this table to browse through the schedule and access quickly the jobs belonging to the route:

The **Highlight** button allows to highlight instantly all jobs of the route (see section 5.9.4, *Filter and Highlighting* for more information):

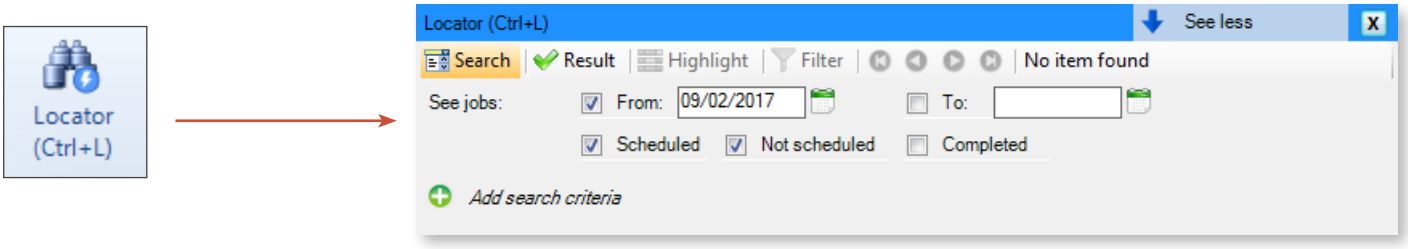


In this table, use the context menu to modify a job or change quickly its progress status:

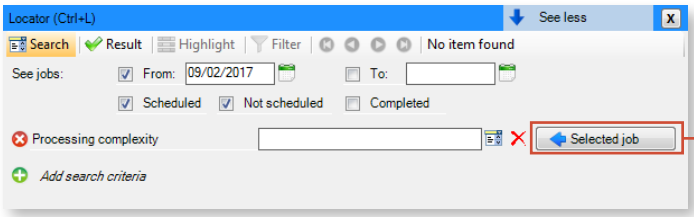


# 5.9.3. Locator

From the **Home** tab of the ribbon, the **Locator (Ctrl+ L)** button opens a window dedicated to quick search. This window can be minimized by clicking **See less** or by double-clicking on the header:



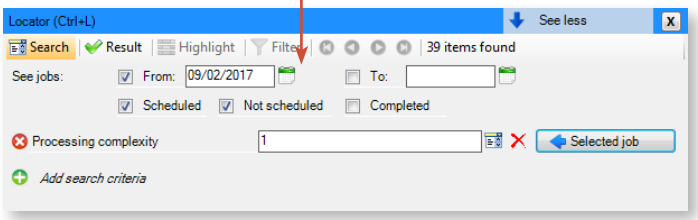

Use the "Search" tab to define your most used search criteria (e.g.: File number, Tool number, Special technical data, etc.). In addition to more traditional input methods, use the **Selected job** button to populate a criterion automatically based on the job currently selected, avoiding keyboard inputs:



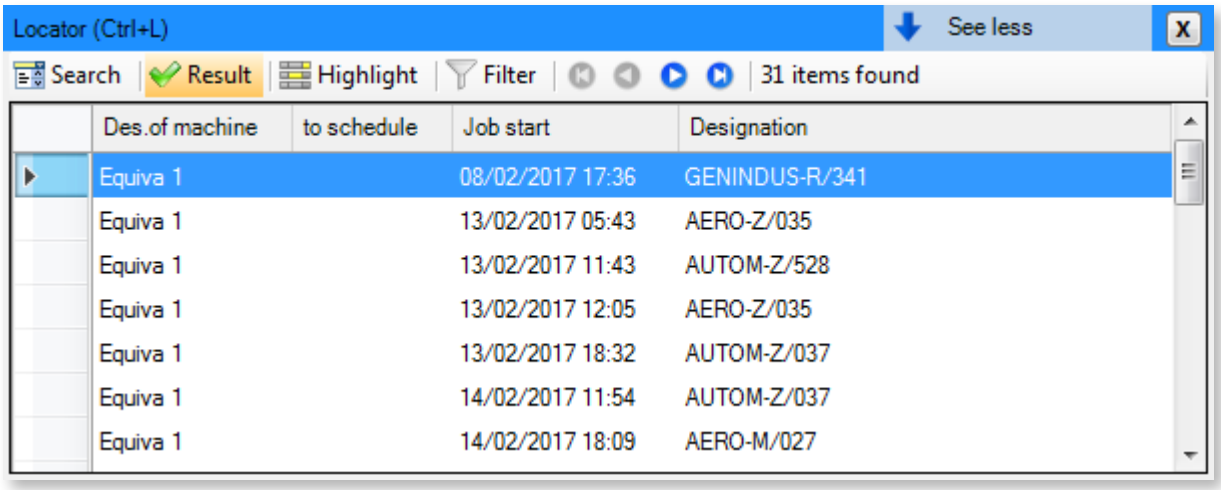

▲ Selection of the Processing complexity as the search criterion, then click on **Selected job** to choose a reference job.

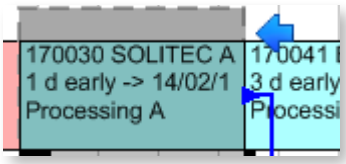
▲ Selection of a reference job

Filter on the Form code of the selected job ▶

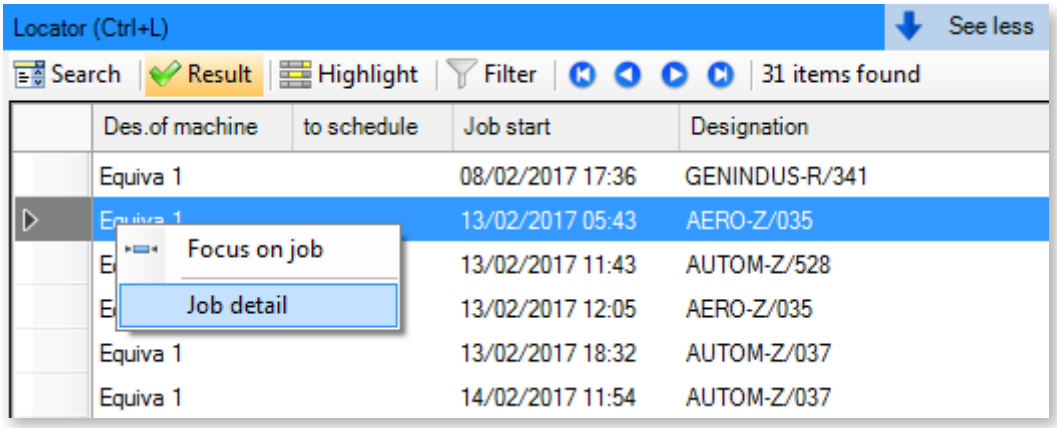



The **Result** button executes that search and displays the list of resulting jobs. The columns in this list can be customized by right clicking on the header:

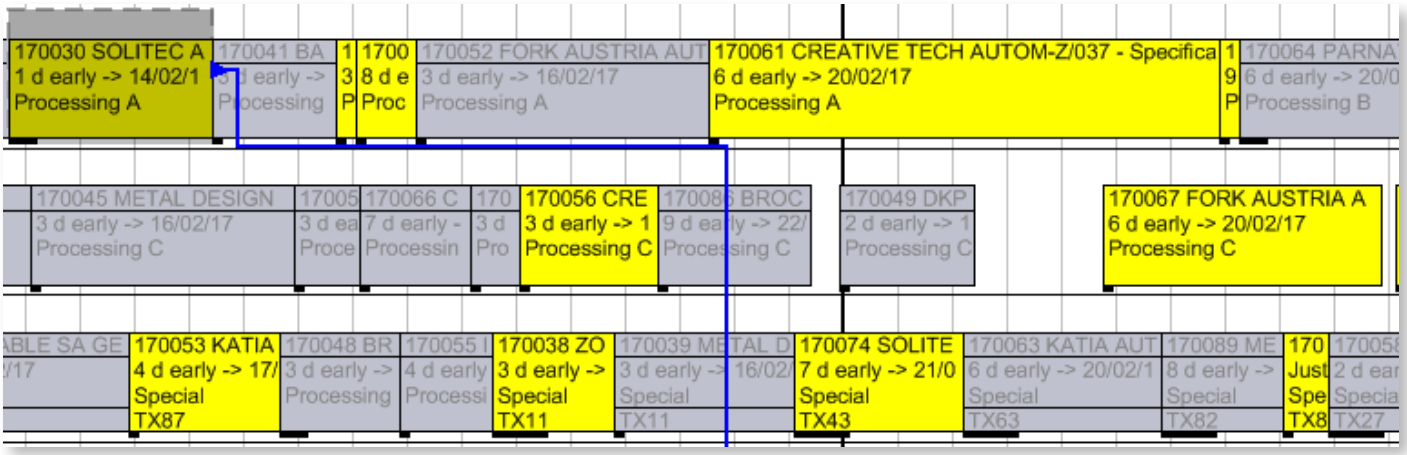





◄ From this list, double-click to navigate quickly to the job, or right-click to modify this job (via the **Job detail** option) ▼

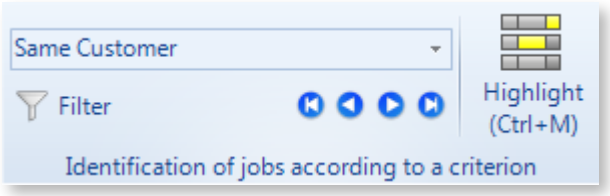



Use the **Highlight** button to spotlight all found jobs found (more information about highlighting in the next section):

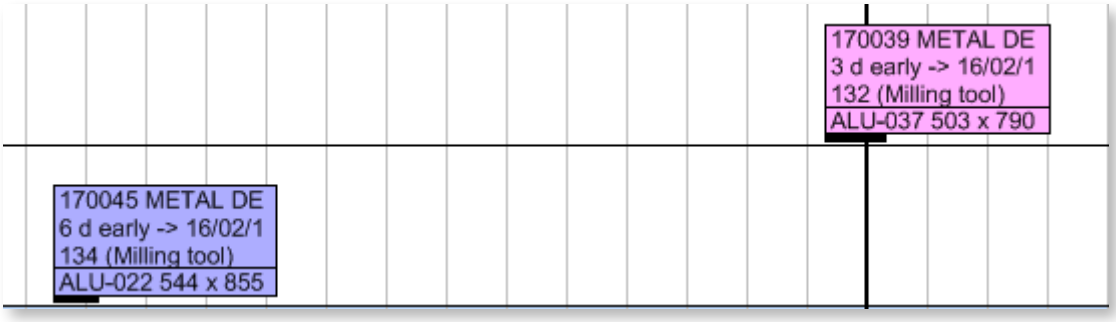


# 5.9.4. Filter and Highlighting

These two options are available under the **Home** tab of the ribbon:

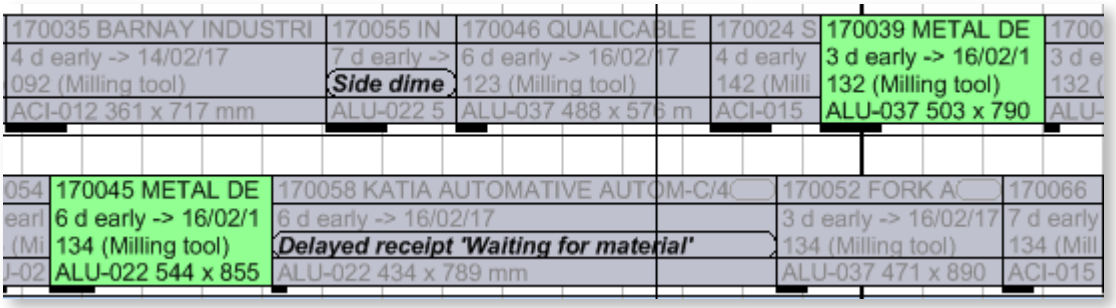



Use the filter and highlighting functions to isolate/spotlight certain jobs depending on their characteristics. First select in the dropdown list the common feature that you wish to highlight. Then click on a job to isolate/spotlight the other jobs sharing that feature:




In the example above, the filter is applied to the customer. The jobs attached to the same customer are the only ones displayed in the Gantt: all the others are hidden. Click again on the filter button to cancel the filter.

The example below illustrates highlighted jobs meeting the same criteria as the filter above. Highlighted jobs are the same colour and, unlike the filter function, jobs which do not meet the criteria are not hidden but greyed out:




When the highlight is based on data such as machines or operations, the highlight colour is the one chosen by the administrator for the involved machine or operation.

Shared by both functions, the navigation buttons can be used to browse through filtered/highlighted jobs.

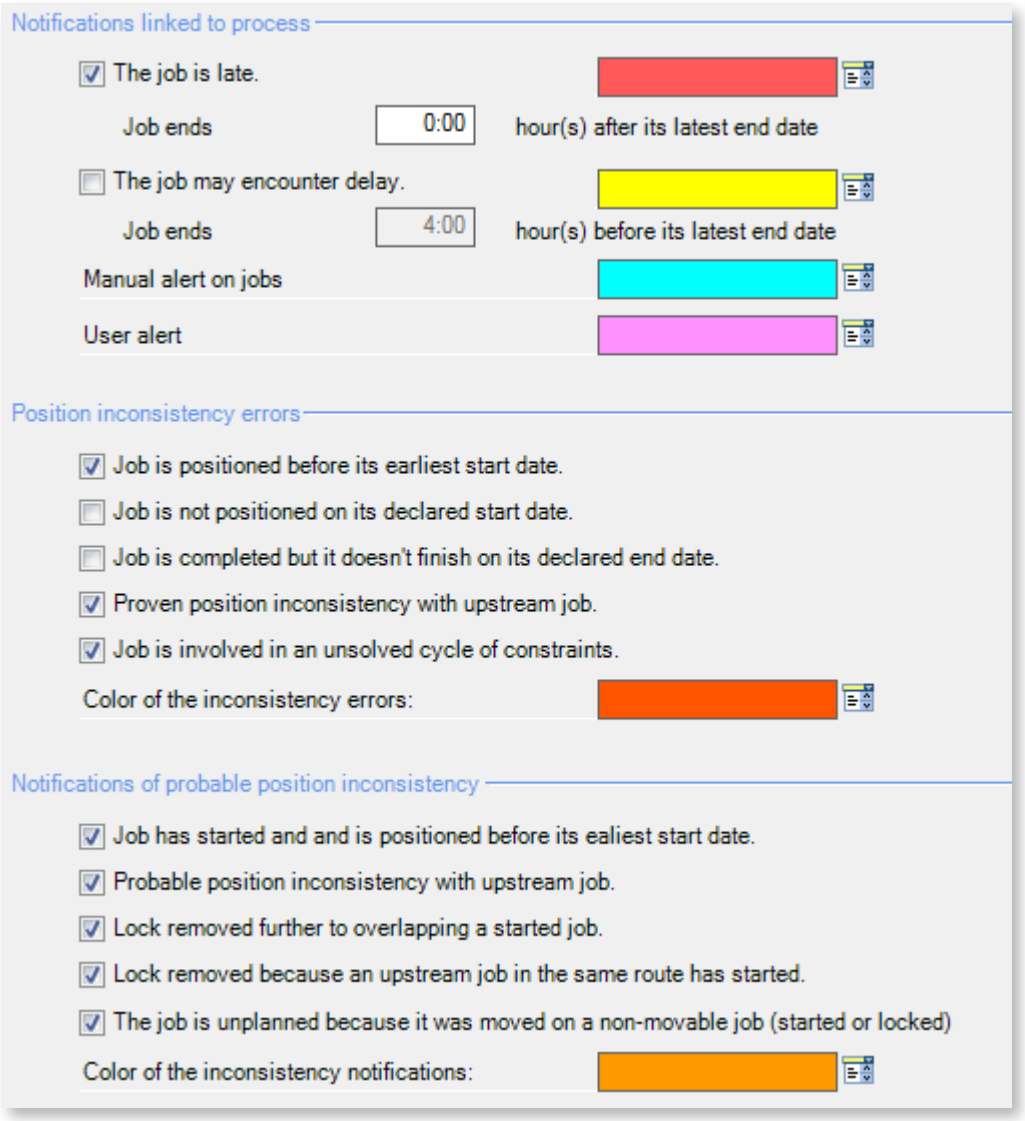
**Note**
The filtering and highlighting function can be combined. However, the highlighting functions available via the **Current route** and **Locator** options are mutually exclusive: you must first disable one to enable the other.

# 5.10. Alerts

## 5.10.1. Configuring alerts

**ADMINISTRATION**

Alerts are configured via the **Configuration** > **General configuration** > **Alerts** tab:



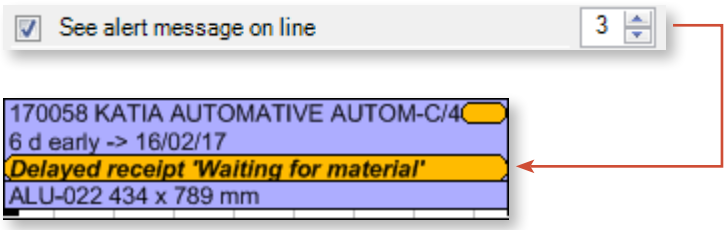

Use this window to select events which will trigger an alert, as well as the colour of the corresponding alert.

# 5.10.2. 5.10.2. Viewing alerts in the schedule

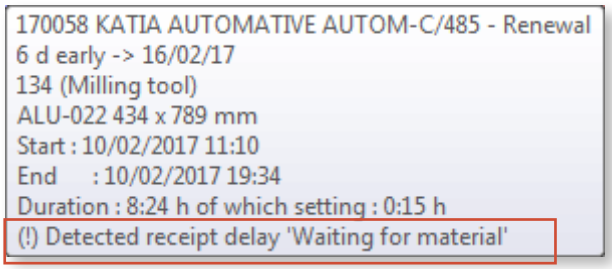
Gantt

**ADMINISTRATION**

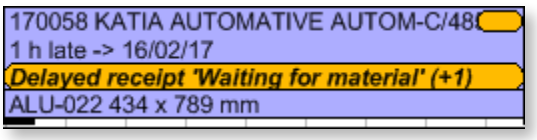
Reminder: to enable/disable alerts in the schedule and choose the line on which they will appear in the ticket, click on **Configuration** > **Display modes** > **Job display**:



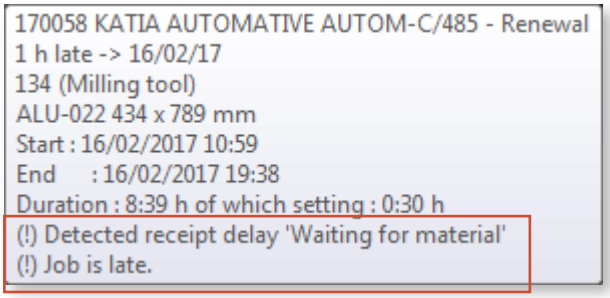

Depending on the schedule zoom level, it is fairly common for the alert to be displayed incompletely on the ticket (as in the example above). To display the alert message in full without opening the job details window, place your cursor on the job. The popping tooltip recaps the characteristics of the job, including alerts, preceded by (!) :




If the job is subject to multiple alerts, the number of additional alerts displays at the end of the alert:



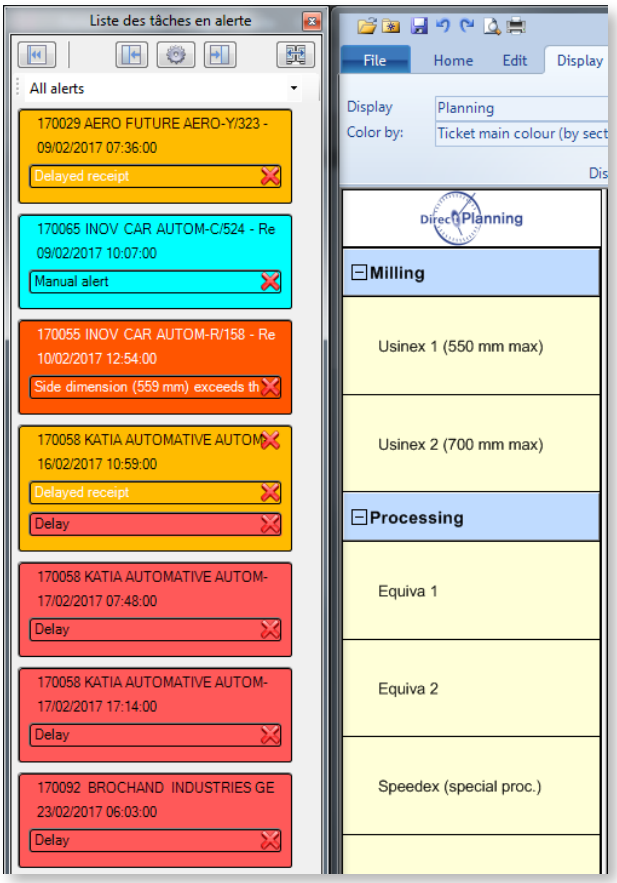

Again, you just have to place your cursor on the job to view the list of associated alerts:



Alert window

In addition to displaying alerts on jobs in the Gantt, you can display all alerts by clicking on **Display** > **Alerts (Ctrl+W)** in the ribbon:

This opens the list of jobs with alerts, at the left of the projection:




◄ In the upper part of the **List of jobs with alerts**, you can:

- Minimize the window
- Push the window to the right or left of the screen
- Filter the displayed alerts
- Display the list on another screen

Each box represents a job with alerts. The nature of alerts depends on their background colour, as configured by the administrator.

To clear an alert, you just have to click on the corresponding red cross.

## 5.10.3. Creating alerts

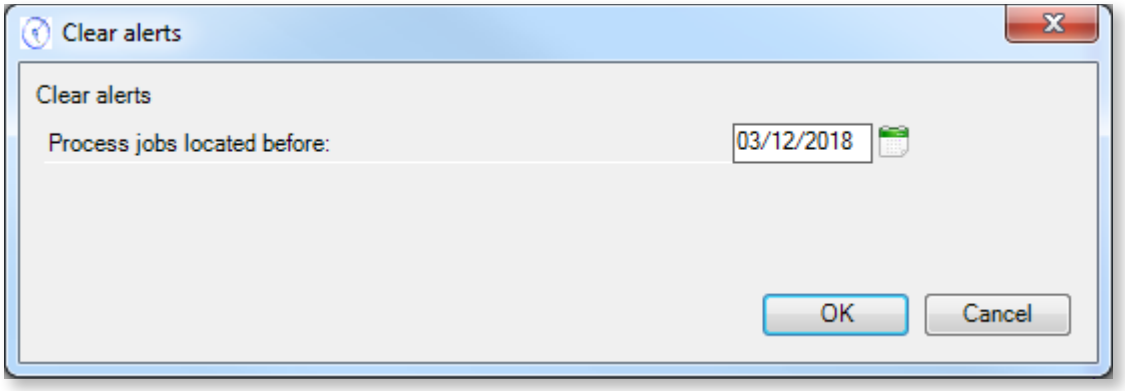
Direct Planning automatically creates a number of alerts, including those about time constraints and machine incompatibilities.

As stated in the section discussing the jobs details screen, users can also create manual alerts via the **Alerts** tab.

# 5.10.4. Clearing alerts

Alerts can be cleared from the **List of jobs with alerts** but other methods are available:

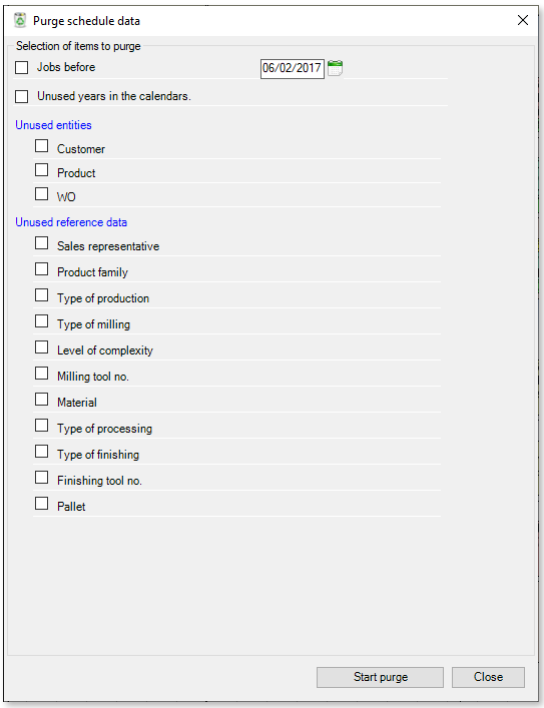
- In the job details window, **Alerts** tab
- By clicking on **Display** > **Alerts** > **Clear alerts** in the ribbon. Use this window to clear all alerts affecting jobs scheduled before a given date (the current date by default)




If alerts have been cleared accidentally, click in the ribbon on **Display** > **Alerts** > **Rebuild alerts** to regenerate them.

# 5.11. Purging data

To purge the schedule data, click the **Data** tab on the top toolbar.




The completed jobs clutter the schedule.
In the same fashion, the unused entities and data make them harder to select.

Purging data regularly removes those outdated elements, and therefore relieves the schedule, thus significantly increasing efficiency.

Before initiating the purge of data :

- Save your schedule.
- Make sure that there is no user currently working on the schedule.

This screen allows to indicate which data to purge, by ticking the corresponding boxes.

You have the ability to purge all jobs placed before a specific date : click on the calendar to select a date or enter it directly.

You can also purge the years which are not used in calendars.

Finally, you can purge the unused elements for each entity or reference data.
This screen lists the entities and reference data which are specific to your schedule, which is why the displayed elements differ from a schedule to another.

When your selection is complete, click on the **Start purge** button.

# 6. Interfacing an ERP with Direct Planning

**ADMINISTRATION**

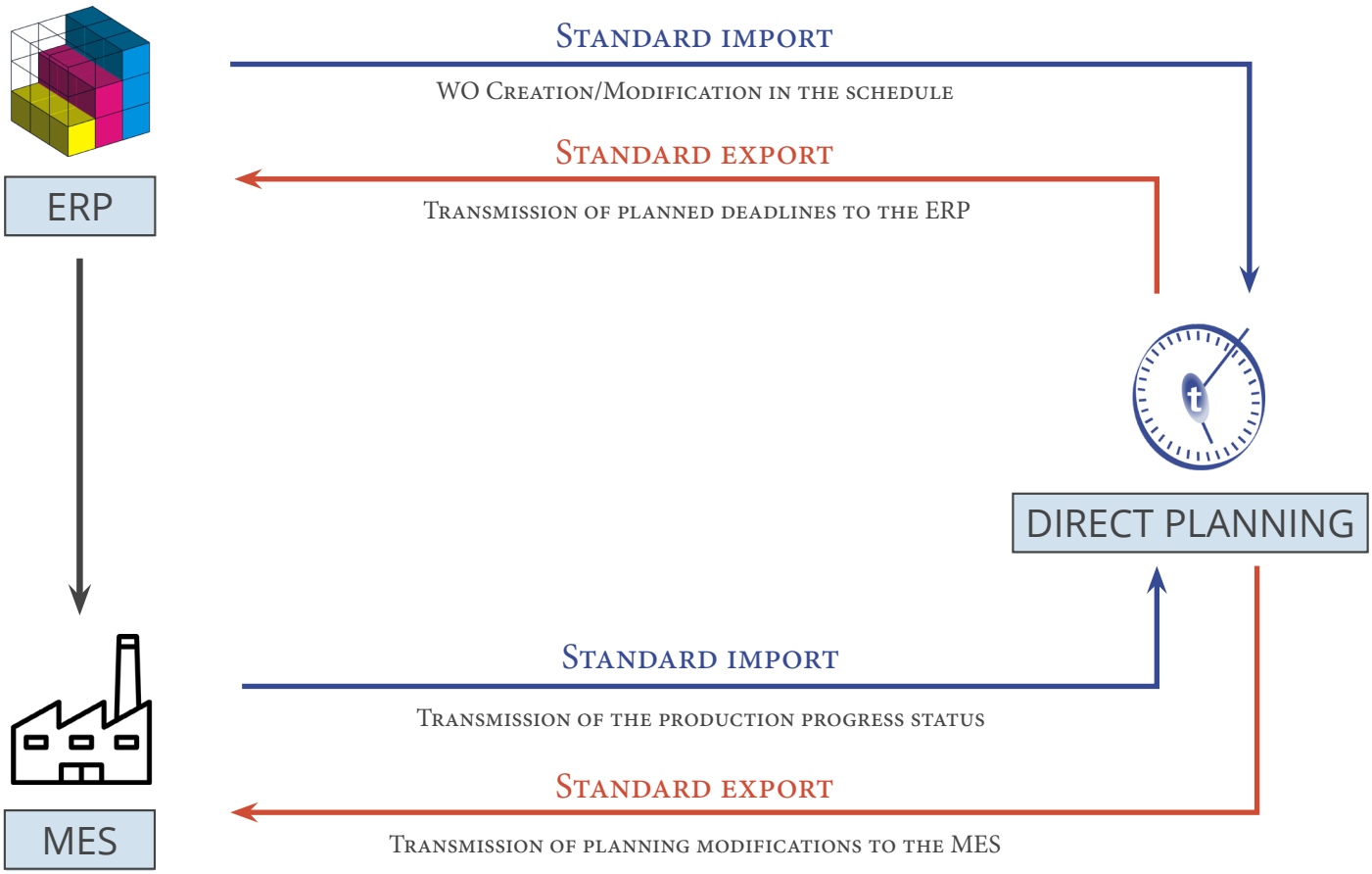
This section is fully reserved to the Direct Planning administrator.

## 6.1. Summary diagram

Overview

(*) ERP, CAPE, Excel

Example in the industry sector: ERP+MES



# 6.1.1. Principles

An application managing jobs can send information to your schedule. The imported data can come from an ERP, a spreadsheet such as Microsoft Excel© or any other application generating data in CSV format.
The CSV format is one of the most widespread: data is recorded in a text file and separated by semicolons (more information below).

In addition to this import function, Direct Planning can transfer planning data to another application able to receive data in the CSV format or in the format of your choice via development of a plugin (following a study). You can use the export functionality without configuring the import beforehand.
Using the import and export functions together allow Direct Planning to send the external software scheduling information for previously imported jobs.

# 6.2. Importing data

As discussed, a third party application (e.g. ERP, CAPE, specific program or Excel macro) can generate instructions for Direct Planning. These CSV files can be automatically integrated to the schedule when they are placed in an import directory. To avoid disrupting the existing planning, imported jobs are assigned the “to schedule” status.

## 6.2.1. Direct Planning import capabilities

Direct Planning can import the following data:

- Reference data (DREF1 to DREF999)
- Entities (ENT1 to ENT10)
- Jobs with flags (TASK)
- Process Information (TASK-IP1 to TASK-IP999)
- Links (LINK)
- Technical elements (TEC1 to TEC20)
- Memos (MEMO)
- Standard Days/Weeks in calendars (CAL-JT-L, CAL-JT-C, CAL-ST-L, CAL-ST-C)

## 6.2.2. The CSV file

The imported data is contained in a csv file containing instructions for updating the schedule in Direct Planning.

### Name and location of file

The file name must comply with the import_xxx.csv format and that file must be located in the folder configured by the administrator (**Configuration** > **General configuration** > **Automatic import**).
The import folder is scanned each time Direct Planning is started, and then every 2 minutes. Furthermore, the planning manager can occasionally perform “on demand” imports when visual alerts indicate that a new file is ready for import.

### Structure

The file data is saved in a text file and semicolon-separated.
In a file to import, each line forms a record and must end by a carriage return and line feed (CR LF).
Below is an example of instruction to import in Direct Planning:

```
ENT1;4;CM;CR0549;CREATIVE TECH;Chateaubriant;44110;;BROCHARD Sébastien;+33 (0)2 36 45 78 99;s.brochard@creativetech.fr;;DEL;;\\SERVER\CLIENT\CR0549;RANDOM;;;;;;;;
```

Lines starting with # will be ignored to avoid the import of certain lines, without deleting them from the

file, especially for test purposes.
Import directives are now strictly processed in the order in which they appear in each import file. This corrects the problems which may arise when there are creation and deletion directives of the same job in the same file.

You will find sample import files in your Direct Planning installation folder.

### Exclusive locks

An external application writes import files while Direct Planning reads them. If these two actions happen simultaneously, there is a conflict. Direct Planning preserves data integrity thanks to a lock management which secures the imports:

- When reading an import file, Direct Planning creates the **directplanning_read.lck** lock file in the import folder.
- 👉 The external application must not attempt to write the file if this lock exists.

- When writing to the import file, the external application must create the **external_write.lck** lock file in the import folder.
- 👉 Direct Planning will not attempt to read the file of this lock exists.

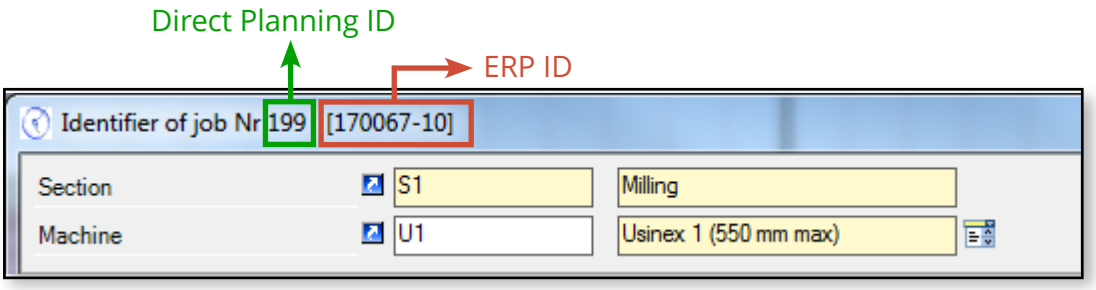
**Note**
This management is available but optional.
If you know that the generation of import files is never performed when Direct Planning is being used (for example at night), this security feature is optional.

### External ID (or ERP ID)

Jobs originating from an third party application (like an ERP) have an external identifier.
This identifier is assigned by the third party application for jobs created via import.
Its purpose is to allow the third party application to recognise a job it previously transferred to Direct Planning. For convenience, we will call it the external ID.

**WARNING**
The external ID must never contain the following signs :
- **#** Hash
- ***** Asterisk
- **%** Percent
- **[** Opening bracket
- **]** Closing bracket

When a job is created in Direct Planning, its external ID is set to 0 (zero) and hidden.
The external ID is unique. It can be modified during the import in Direct Planning.
The identifiers are displayed in the job details window, via double-click in the schedule (see next page).




## 6.2.3. Data import formats

Formats and Direct Planning versions

| Format version | Direct Planning version |
|---|---|
| 4 | Since Direct Planning 3.1 |
| 3 | Direct Planning 3.0 |
| 2 | Direct Planning 2.* |

In creation, the required zones are specified in the **Comments** column.

## Importing entities

| No. | Designation | Format | Comments |
|---|---|---|---|
| 1 | Data type | alpha | Possible values: from **ENT1** to **ENT10**<br>**Required** |
| 2 | Version of import format | alpha | Value: **4**<br>**Required** |
| 3 | Action | alpha | **C** (Creation)<br>**CM** (Creation when the entity does not exist, Modification if it already exists). In entity creation, the @ sign can be used to force a zone, following the @ ZONE format. However, if the entity already exists, this character indicates that the specified zone must not be modified.<br>**Required** |
| 4 | Identifier | alpha | Job identifier for the ERP<br>**Required** |
| 5 | Designation | alpha | |
| 6 | Configurable area 1 | alpha | Configurable areas are typed.<br><br>If the value transmitted in the import file does not match the type of zone, it will be ignored (e.g. an “ABC” string exported to a zone set as numeric). |
| 7 | Configurable area 2 | alpha | |
| 8 | Configurable area 3 | alpha | |
| 9 | Configurable area 4 | alpha | |
| 10 | Configurable area 5 | alpha | |
| 11 | Configurable area 6 | alpha | |
| 12 | Configurable area 7 | alpha | |
| 13 | Configurable area 8 | alpha | |
| 14 | Configurable area 9 | alpha | |
| 15 | Configurable area 10 | alpha | |
| 16 | Colour | alpha | 3 methods are available to express the colour:<br>RGB: (3 comma-separated values)<br>Html name<br>The RANDOM keyword can be used to set a random colour when creating technical elements |

| No. | Designation | Format | Comments |
|---|---|---|---|
| 17 | Identifier of linked entity 1 | alpha | Links between entities are optional.<br><br>When links are included in the import file, the presence of linked entities is checked. |
| 18 | Identifier of linked entity 2 | alpha | |
| 19 | Identifier of linked entity 3 | alpha | |
| 20 | Identifier of linked entity 4 | alpha | |
| 21 | Identifier of linked entity 5 | alpha | |
| 22 | Identifier of linked entity 6 | alpha | |
| 23 | Identifier of linked entity 7 | alpha | |
| 24 | Identifier of linked entity 8 | alpha | |
| 25 | Identifier of linked entity 9 | alpha | |

## Notes:

- Alpha fields are limited to 50 characters for codes and 200 characters for any other text zone.
- There can be no link for entity 1 which sits at the top of the hierarchy.
- Entity links are always created “upwards”: for instance, if entities 2 and 3 are linked, the link must be declared from entity 3 to entity 2, and not the opposite.
- Links must respect the hierarchy: for example, if entity 3 is linked with entity 2 and entity 2 is linked with entity 1, then entity 3 must also be linked with entity 1.
- There can be no duplicate, neither in the identifier nor in the designation of entities.
- If a duplicate is found in the identifier of an entity, a warning message is generated. This situation can be normal when importing a job attached to an existing customer: the customer is reimported with the new job, triggering a normal warning message.
- If there is a duplicate in the designation of an entity (different identifier but identical designation), the import will add the identifier in parentheses after the description.

**Example of instruction to import an entity (in creation/modification):**

```
ENT2;4;CM;PA0001;AUTOM-Z/528;AUT;WB9752;16072;92.5 x 49 x 93.5;;;;;;;RANDOM;CR0549;;;;;;;;
```

## Importing reference data

Reserved to the **Industry** mode.

| No. | Designation | Format | Comments |
|---|---|---|---|
| 1 | Data type | alpha | Possible values: from **DREF1** to **DREF999**<br>Required |
| 2 | Version of import format | alpha | Value: **4**<br>Required |
| 3 | Action | alpha | **C** (Creation)<br>**CM** (Creation when the reference data does not exist, Modification if it already exists)<br>Required |
| 4 | Identifier of the reference data | alpha | Required |
| 5 | Designation of the reference data | alpha | |
| 6 | Colour | alpha | 3 methods are available to express the colour:<br>RGB: (3 comma-separated values)<br>Html name<br>The RANDOM keyword can be used to set a random colour when creating reference data. If CM: not modified |

## Notes:

- There can be no duplicate, neither in the identifier nor in the designation of reference data.
- If a duplicate is found in the identifier of reference data, a warning message is generated. This situation can be normal when importing a job with existing reference data: the reference data is reimported with the new job, triggering a normal warning message.
- If there is a duplicate in the designation of reference data (different identifier but identical designation), then the import will add the identifier in parentheses after the description.

**Example of instruction to import reference data (in creation, designation in green):**

```
DREF1;4;C-NOERROR;0;Nouveauté;RANDOM
```

## Importing jobs

| No. | Designation | Mode | | | Comments |
|---|---|---|---|---|---|
| | | I | P | S | |
| 01 | Data type | ✓ | ✓ | ✓ | Value: **TASK**<br>Format: **alpha**<br>Required |
| 02 | Version of import format | ✓ | ✓ | ✓ | Values: **4**<br>Format: **alpha**<br>Required |
| 03 | Action | ✓ | ✓ | ✓ | Action code<br>Format: **alpha**<br>Required |
| 04 | Unique external identifier for this job (ERP ID) | ✓ | ✓ | ✓ | Your unique identifier for this job, or the Direct Planning identifier.<br>Normally, this is where you indicate your unique identifier for this job. Instead of your identifier, you can specify the Direct Planning identifier preceded by the hash sign (#).<br>Format: **alpha**<br>Required |
| 05 | Move selection down | ✓ | ✓ | ✓ | Format: **alpha** |
| 06 | Identifier of resource | ✓ | ✓ | ✓ | Format: **alpha**<br>When creating a job, use the @ character to pre-position the job on the specified resource. If the job already exists, it indicates that this resource must not be modified.<br>Required |
| 07 | Operation identifier | ✓ | ✗ | ✗ | If it is #DEF, the job operation will be initialised to the machine default operation.<br>If blank, content is forced to blank.<br>Format: **alpha** |
| 08 | Start date and time | ✓ | ✓ | ✓ | The start or end time must be indicated, but not both.<br>If none is entered, the start date is forced to the current date and time.<br>Format: **datetime*** |
| 09 | End date and time | ✓ | ✓ | ✓ | |
| *Datetime formats available:<br>• **DD.MM.YYYY hh:mm** (with a space between the year and time)<br>• **DD/MM/YYYY hh:mm** (with a space between the year and time)<br>• **DD.MM.YYYY**<br>• **DD/MM/YYYY**<br>• "**NOW**": conversion to the date and time of the import | | | | | |
| 10 | Planned quantity | ✓ | ✗ | ✗ | Format: **quantity** |
| 11 | Percentage of variable waste | ✓ | ✗ | ✗ | Only one decimal taken into account<br>Format: 3 or 3.0 for 3% of variable waste<br>Format: **decimal** |
| 12 | Number of WU to produce per operative WU | ✓ | ✗ | ✗ | The number of working units of quantity to produce contained in a working unit of operative quantity.<br>e.g. the number of posters (representing the quantity recorded in production) per sheet (representing the quantity processed by the machine).<br>By default: **1**. |
| 13 | Number of work rate WU per operative WU | ✓ | ✗ | ✗ | The number of working units for entering the work rate contained in a working unit of operative quantity.<br>E.g. the linear footage (unit in which is entered the machine work rate) for a sheet (representing the quantity processed by the machine). |

| No. | Designation | Mode | | | Comments |
|---|---|---|---|---|---|
| | | I | P | S | |
| 14 | Performed quantity | ✓ | ✗ | ✗ | Will be entered only if the ERP is to force the performed quantity. Forcing this value will automatically calculate the progress percentage.<br>Format: **quantity** |
| 15 | Non-compliant quantity | ✓ | ✓ | ✓ | Non-compliant product quantity<br>Format: **quantity** |
| 16 | Progress percentage | ✓ | ✓ | ✗ | Value: from 0 to 100.<br>Not to be entered if the performed quantity is specified.<br>If the planned quantity is entered, this value will allow the calculation of the performed quantity.<br>Format: **integer** |
| 17 | Forced transition time (deprecated) | ✓ | ✗ | ✗ | Should be entered when forcing a transition duration (be careful, 0 is a value).<br>Otherwise, leave it blank.<br>The value must be ignored if management of transition times is not enabled in the schedule.<br>Format: **duration**** |
| ** Durations can be expressed in two ways:<br>• An **integer** indicating the number of minutes (e.g. **120**)<br>• A number of hours and a number of minutes **separated by the character ":"** (e.g. **7:50**) | | | | | |
| 18 | Forced planned setting duration | ✓ | ✗ | ✗ | To be entered when forcing the planned setting duration.<br>Leaving it blank will make DP calculate setting duration.<br>Format: **duration** |
| 19 | Performed setting duration | ✓ | ✗ | ✗ | Should be entered when the ERP is aware of the performed setting duration.<br>Format: **duration** |
| 20 | Performed durations of setting downtime | ✓ | ✓ | ✓ | Durations of downtime incurred by setting<br>Format: **duration** |
| 21 | Completed setting | ✓ | ✗ | ✗ | Allows to indicate that the setting is complete.<br>O/N or Y/N or 0/1<br>Format: **O/N** |
| 22 | Industry: Forced planned running duration<br>Service: Duration<br>Project: Planned duration | ✓ | ✓ | ✓ | Industry mode: to be entered when forcing the planned running duration.<br>Leaving it blank will make Direct Planning calculate running duration.<br>Format: **duration**<br>**Required in Project and Service modes** |
| 23 | Industry mode: Performed running duration<br>Project mode: Performed duration | ✓ | ✓ | ✗ | To be entered when the ERP is aware of the performed running duration.<br>Format: **duration** |
| 24 | Duration of downtime | ✓ | ✓ | ✗ | Should be entered when the ERP is aware of the downtime durations during running.<br>Format: **duration** |
| 25 | Earliest start date and time*** | ✓ | ✓ | ✗ | Format: **datetime** |
| 26 | Latest end date and time*** | ✓ | ✓ | ✗ | |
| *** In Industry and Project modes: if the format imported to this field is a short format (DD/MM/YYYY), the program will automatically set the default time configured.<br>Otherwise, the imported time is used even if it is 00h00.<br>If the field Earliest start date is not populated, it will be initialised by Direct Planning to the date of the import.<br>Of course, the Latest end date field is left blank if the expected element is not received. | | | | | |

| No. | Designation | Mode | | | Comments |
|---|---|---|---|---|---|
| | | I | P | S | |
| 27 | Manual alert message | ✓ | ✓ | ✓ | Used to force a manual alert message on the job.<br>Format: **alpha** |
| 28 | Actual start date of job | ✓ | ✓ | ✓ | Format: **datetime** |
| 29 | Actual end date of job | ✓ | ✓ | ✓ | Format: **datetime** |
| 30 | Started job | ✓ | ✓ | ✓ | If value is O and field 28 is empty, the job current start date is used.<br>Format: **O/N** |
| 31 | Completed job | ✓ | ✓ | ✓ | If value is O and field 32 = 0, field 29 is ignored.<br>The job current end date is used.<br>If value is O and field 32 = 1, field 29 is ignored.<br>The calculation of end date is based on the performed durations.<br>If value is O and field 32 = 2, field 29 is required. The performed running duration is calculated automatically.<br>Format: **O/N** |
| 32 | Method of time entry | ✓ | ✓ | ✓ | 0=none / 1=by performed duration / 2=by end date<br>Format: **integer** |
| 33 | ID of entity 1 | ✓ | ✓ | ✓ | alpha |
| 34 | ID of entity 2 | ✓ | ✓ | ✓ | |
| 35 | ID of entity 3 | ✓ | ✓ | ✓ | |
| 36 | ID of entity 4 | ✓ | ✓ | ✓ | |
| 37 | ID of entity 5 | ✓ | ✓ | ✓ | |
| 38 | ID of entity 6 | ✓ | ✓ | ✓ | |
| 39 | ID of entity 7 | ✓ | ✓ | ✓ | |
| 40 | ID of entity 8 | ✓ | ✓ | ✓ | |
| 41 | ID of entity 9 | ✓ | ✓ | ✓ | |
| 42 | ID of entity 10 | ✓ | ✓ | ✓ | |
| 43 | Configurable area 1 | ✓ | ✓ | ✓ | alpha |
| 44 | Configurable area 2 | ✓ | ✓ | ✓ | |
| 45 | Configurable area 3 | ✓ | ✓ | ✓ | |
| 46 | Configurable area 4 | ✓ | ✓ | ✓ | |
| 47 | Configurable area 5 | ✓ | ✓ | ✓ | |
| 48 | Configurable area 6 | ✓ | ✓ | ✓ | |
| 49 | Configurable area 7 | ✓ | ✓ | ✓ | |
| 50 | Configurable area 8 | ✓ | ✓ | ✓ | |
| 51 | Configurable area 9 | ✓ | ✓ | ✓ | |
| 52 | Configurable area 10 | ✓ | ✓ | ✓ | |

| No. | Designation | Mode | | | Comments |
|---|---|---|---|---|---|
| | | I | P | S | |
| 53 | ID of technical element 1 | ✓ | ✗ | ✗ | alpha |
| 54 | ID of technical element 2 | ✓ | ✗ | ✗ | |
| 55 | ID of technical element 3 | ✓ | ✗ | ✗ | |
| 56 | ID of technical element 4 | ✓ | ✗ | ✗ | |
| 57 | ID of technical element 5 | ✓ | ✗ | ✗ | |
| 58 | ID of technical element 6 | ✓ | ✗ | ✗ | |
| 59 | ID of technical element 7 | ✓ | ✗ | ✗ | |
| 60 | ID of technical element 8 | ✓ | ✗ | ✗ | |
| 61 | ID of technical element 9 | ✓ | ✗ | ✗ | |
| 62 | ID of technical element 10 | ✓ | ✗ | ✗ | |
| 63 | ID of technical element 11 | ✓ | ✗ | ✗ | |
| 64 | ID of technical element 12 | ✓ | ✗ | ✗ | |
| 65 | ID of technical element 13 | ✓ | ✗ | ✗ | |
| 66 | ID of technical element 14 | ✓ | ✗ | ✗ | |
| 67 | ID of technical element 15 | ✓ | ✗ | ✗ | |
| 68 | ID of technical element 16 | ✓ | ✗ | ✗ | |
| 69 | ID of technical element 17 | ✓ | ✗ | ✗ | |
| 60 | ID of technical element 18 | ✓ | ✗ | ✗ | |
| 71 | ID of technical element 19 | ✓ | ✗ | ✗ | |
| 72 | ID of technical element 20 | ✓ | ✗ | ✗ | |
| | Flag 1 | | | | |
| 73 | Status | ✓ | ✓ | ✓ | Values: 0 to 5<br>Format: **num** |
| If this zone is not populated, the zero value is set by default, meaning that the flag is inactive.<br>When dealing with an indicative flag, this zone accepts values 0 (inactive) or 1 (active).<br>When dealing with-a multi-status flag, this zone accepts values ranging from 0 (inactive) to 5. | | | | | |
| 74 | Planned date of receipt*** | ✓ | ✓ | ✓ | Applies only to Waiting for element receipt flags<br>Format: **datetime*** ** |
| *** In Industry and Project modes: if the format imported to this field is a short format (DD/MM/YYYY), the program will automatically set the default time configured.<br>Otherwise, the imported time is used even if it is 00h00. | | | | | |
| 75 | Actual date of receipt | ✓ | ✓ | ✓ | Only for Waiting for receipt types of flags. Will only be taken into account if the status of the flag corresponds to a received element.<br>Format: **datetime** |
| 76 | Configurable area 1 | ✓ | ✓ | ✓ | |
| 77 | Configurable area 2 | ✓ | ✓ | ✓ | |
| 78 | Configurable area 3 | ✓ | ✓ | ✓ | |
| 79 | Configurable area 4 | ✓ | ✓ | ✓ | |

| No. | Designation | Mode | | | Comments |
|---|---|---|---|---|---|
| | | I | P | S | |
| 80 | Configurable area 5 | ✓ | ✓ | ✓ | |
| 81 | Configurable area 6 | ✓ | ✓ | ✓ | |
| 82 | Configurable area 7 | ✓ | ✓ | ✓ | |
| 83 | Configurable area 8 | ✓ | ✓ | ✓ | |
| 84 | Configurable area 9 | ✓ | ✓ | ✓ | |
| 85 | Configurable area 10 | ✓ | ✓ | ✓ | |
| Flag 2 | | | | | |
| 86 | Status | ✓ | ✓ | ✓ | Values: 0 to 5<br>Format: **num** |
| 87 | Planned date of receipt | ✓ | ✓ | ✓ | Applies only to Waiting for element receipt flags<br>Format: **datetime** |
| 88 | Actual date of receipt | ✓ | ✓ | ✓ | Only for Waiting for receipt types of flags. Will only be taken into account if the status of the flag corresponds to a received element.<br>Format: **datetime** |
| 89 ▼ 98 | Configurable area 1 ▼ Configurable area 10 | ✓ | ✓ | ✓ | |
| Flag 3 | | | | | |
| 99 | Status | ✓ | ✓ | ✓ | Values: 0 to 5<br>Format: **num** |
| 100 | Planned date of receipt | ✓ | ✓ | ✓ | Applies only to Waiting for element receipt flags<br>Format: **datetime** |
| 101 | Actual date of receipt | ✓ | ✓ | ✓ | Only for Waiting for receipt types of flags. Will only be taken into account if the status of the flag corresponds to a received element.<br>Format: **datetime** |
| 102 ▼ 111 | Configurable area 1 ▼ Configurable area 10 | ✓ | ✓ | ✓ | |
| Flag 4 | | | | | |
| 112 | Status | ✓ | ✓ | ✓ | Values: 0 to 5<br>Format: **num** |
| 113 | Planned date of receipt | ✓ | ✓ | ✓ | Applies only to Waiting for element receipt flags<br>Format: **datetime** |
| 114 | Actual date of receipt | ✓ | ✓ | ✓ | Only for Waiting for receipt types of flags. Will only be taken into account if the status of the flag corresponds to a received element.<br>Format: **datetime** |
| 115 ▼ 124 | Configurable area 1 ▼ Configurable area 10 | ✓ | ✓ | ✓ | |
| Flag 5 | | | | | |

| No. | Designation | Mode | | | Comments |
|---|---|---|---|---|---|
| | | I | P | S | |
| 125 | Status | ✓ | ✓ | ✓ | Values: 0 to 5<br>Format: **num** |
| 126 | Planned date of receipt | ✓ | ✓ | ✓ | Applies only to Waiting for element receipt flags<br>Format: **datetime** |
| 127 | Actual date of receipt | ✓ | ✓ | ✓ | Only for Waiting for receipt types of flags. Will only be taken into account if the status of the flag corresponds to a received element.<br>Format: **datetime** |
| 128 ▼ 137 | Configurable area 1 ▼ Configurable area 10 | ✓ | ✓ | ✓ | |
| | Flag 6 | | | | |
| 138 | Status | ✓ | ✓ | ✓ | Values: 0 to 5<br>Format: **num** |
| 139 | Planned date of receipt | ✓ | ✓ | ✓ | Applies only to Waiting for element receipt flags<br>Format: **datetime** |
| 140 | Actual date of receipt | ✓ | ✓ | ✓ | Only for Waiting for receipt types of flags. Will only be taken into account if the status of the flag corresponds to a received element.<br>Format: **datetime** |
| 141 ▼ 150 | Configurable area 1 ▼ Configurable area 10 | ✓ | ✓ | ✓ | |
| | Flag 7 | | | | |
| 151 | Status | ✓ | ✓ | ✓ | Values: 0 to 5<br>Format: **num** |
| 152 | Planned date of receipt | ✓ | ✓ | ✓ | Applies only to Waiting for element receipt flags<br>Format: **datetime** |
| 153 | Actual date of receipt | ✓ | ✓ | ✓ | Only for Waiting for receipt types of flags. Will only be taken into account if the status of the flag corresponds to a received element.<br>Format: **datetime** |
| 154 ▼ 163 | Configurable area 1 ▼ Configurable area 10 | ✓ | ✓ | ✓ | |
| | Flag 8 | | | | |
| 164 | Status | ✓ | ✓ | ✓ | Values: 0 to 5<br>Format: **num** |
| 165 | Planned date of receipt | ✓ | ✓ | ✓ | Applies only to Waiting for element receipt flags<br>Format: **datetime** |
| 166 | Actual date of receipt | ✓ | ✓ | ✓ | Only for Waiting for receipt types of flags. Will only be taken into account if the status of the flag corresponds to a received element.<br>Format: **datetime** |
| 167 ▼ 176 | Configurable area 1 ▼ Configurable area 10 | ✓ | ✓ | ✓ | |

| No. | Designation | Mode | | | Comments |
|---|---|---|---|---|---|
| | | I | P | S | |
| Flag 9 | | | | | |
| 177 | Status | ✓ | ✓ | ✓ | Values: 0 to 5<br>Format: **num** |
| 178 | Planned date of receipt | ✓ | ✓ | ✓ | Applies only to Waiting for element receipt flags<br>Format: **datetime** |
| 179 | Actual date of receipt | ✓ | ✓ | ✓ | Only for Waiting for receipt types of flags. Will only be taken into account if the status of the flag corresponds to a received element.<br>Format: **datetime** |
| 180 ▼ 189 | Configurable area 1<br>Configurable area 10 | ✓ | ✓ | ✓ | |
| Flag 10 | | | | | |
| 190 | Status | ✓ | ✓ | ✓ | Values: 0 to 5<br>Format: **num** |
| 191 | Planned date of receipt | ✓ | ✓ | ✓ | Applies only to Waiting for element receipt flags<br>Format: **datetime** |
| 192 | Actual date of receipt | ✓ | ✓ | ✓ | Only for Waiting for receipt types of flags. Will only be taken into account if the status of the flag corresponds to a received element.<br>Format: **datetime** |
| 193 ▼ 202 | Configurable area 1<br>Configurable area 10 | ✓ | ✓ | ✓ | |

## Action codes

| Action code | Description |
|---|---|
| C | Creation of a job |
| CM | **CM** (Creation when the job does not exist, Modification if it already exists). |
| M | Job modification |
| M-PLAN | Job modification with assigning of the "to schedule" status.<br>This allows the external software to decide what will be the impact of a modification on the schedule status: this way, after an import, jobs scheduled in Direct Planning can take the to schedule status because of significant changes which took place in the external software. |
| S | Job deletion |

**OUR ADVICE**

Each action code can be completed by -NOWARNING and -NOERROR extensions to prevent, respectively, the display of a warning or error message. It is recommended to reserve these extensions to the deletion action (**S**), when deleting an element to replace it (like in the "cancel and replace" example of the next section).

## Job modifications (CM, M, M-PLAN)

1. The 4 first zones are required as they form the key used to formally identify a job and the action to perform. These zones are the following: 01-Data type 02-Version of the import format 03-Action 04-External unique identifier (ERP) for this job.

2. The zones which must not be modified must contain the @ sign.

3. Zones 08 and 09 (start and end date and time) can only be modified if you assign the job the to schedule status (action code M-PLAN above).

4. The zones requiring modification must contain the new value. If a zone is empty, this means that its content is deleted.

5. To modify a job based its Direct Planning internal ID, and not on its external ID, you must put a hash sign (#) at the beginning of zone 04 (external ID) in the import file on a line where the action code = M (Modification). For example, indicating #120 modifies the job with Direct Planning internal ID 120. This is useful to modify jobs created in Direct Planning.

6. You can also modify the external ID. Indeed, for a job created by Direct Planning and not yet attached to an external ID, the ERP ID is zero. An external ID can then be assigned to the job by preceding it with the | (pipe) character. Examples: #120|ABC to find the job with internal ID 120 and assign it the external ID ABC, or TUV|ABC to modify the job with external ID TUV and change it to ABC.

7. When modifying a job which has an external ID and which was split into multiple jobs, the modifications apply to all the subdivided jobs (the modification of the duration is the only one forbidden).

Example of instruction to import a job in creation/modification with the “@” character:

```
TASK;4;CM;180021;Laser cutting;@MAC1;
```

This instructions specifies that the job designation must always contain “Laser cutting”, whether the job exists or not. Entering the character @ before MAC1 indicates that if the job is created, it is pre-positioned on the MAC1 machine. However, if the job already exists, @ indicates that this zone (the machine code) must not be modified. This way, if the planning manager had moved this job to another machine, its positioning is preserved.

## Job deletions (S)

1. Deleting a linked job also deletes the links, without deleting the other linked jobs.

2. You can put an asterisk as a wildcard in zone 04 (external ID). For example, indicating 05116001-1-* deletes all jobs whose external ID begins with 05116001-1-. This interesting feature allows the ERP (e.g. VoluPack) to perform a simple cancel and replace type of regeneration. This can be used to delete all operations attached to a WO, and then recreate the WO.

## Importing Process Information

| No. | Designation | Format | Comments |
|---|---|---|---|
| 1 | Data type | alpha | Possible values: from **TASK-IP1** to **TASK-IP999**<br>**Required** |
| 2 | Version of import format | alpha | Value: **4**<br>**Required** |
| 3 | Action | alpha | **CM** (Creation Modification): in Process Information creation, the @ character can be used to force a zone, following the @ZONE format. However, if Process Information already exists, this character indicates that the specified zone must not be modified.<br>**M** (Modification)<br>**S** (Deletion)<br>**Required** |
| 4 | ERP ID | alpha | Job identifier for the ERP<br>**Required** |
| 5 | Configurable area 1 | alpha | Configurable areas are typed.<br><br>If the value transmitted in the import file does not match the type of zone, it will be ignored (e.g. an "ABC" string exported to a zone set as numeric). |
| 6 | Configurable area 2 | alpha | |
| 7 | Configurable area 3 | alpha | |
| 8 | Configurable area 4 | alpha | |
| 9 | Configurable area 5 | alpha | |
| 10 | Configurable area 6 | alpha | |
| 11 | Configurable area 7 | alpha | |
| 12 | Configurable area 8 | alpha | |
| 13 | Configurable area 9 | alpha | |
| 14 | Configurable area 10 | alpha | |

Like the job import, the Process Information import is based on the ERP ID or the Direct Planning. Normally, this is where you indicate your unique identifier for this job. Instead of your identifier, you can specify the Direct Planning identifier preceded by the hash sign (#).

**REMINDER**

The hash sign (#) must never be appear in your ERP identifier.

A warning message will be logged in the journal if a Process Information is not active for this machine. Deleting a job also deletes the associated Process Information.

**Example of instruction to import Process info (in creation/modification, ERP ID in green):**

```
TASK-IP1;4;CM;17030187-1-1-1-0/020;EP07075;1300;948;XPC0010;300;2;230;;;
```

# Importing technical elements

**REMINDER**

To harness the full potential of Direct Planning, you better use Reference data, introduced in version 3.1 instead of technical elements.

| No. | Designation | Format | Comments |
|---|---|---|---|
| 1 | Data type | alpha | Possible values: from **TEC1** to **TEC20**<br>**Required** |
| 2 | Version of import format | alpha | Value: **4**<br>**Required** |
| 3 | Action | alpha | **C** (Creation)<br>**CM** (Creation when the technical element does not exist, Modification if it already exists)<br>**Required** |
| 4 | Identifier of technical element | alpha | **Required** |
| 5 | Designation of technical element | alpha | |
| 6 | Colour | alpha | 3 methods are available to express the colour:<br>RGB: (3 comma-separated values)<br>Html name<br>The RANDOM keyword can be used to set a random colour when creating technical elements |

## Observations:

- There can be no duplicate, neither in the identifier nor in the designation of technical elements.
- If a duplicate is found in the identifier of a technical element, a warning message is generated. This situation can be normal when importing a job with an existing technical element: the technical element is reimported with the new job, triggering a normal warning message.
- If there is a duplicate in the designation of a technical element (different identifier but identical designation), then the import will add the identifier in parentheses after the description.

Importing links

| No. | Designation | Format | Comments |
|---|---|---|---|
| 1 | Data type | alpha | Value: **LINK**<br>Required |
| 2 | Version of import format | alpha | Value: **4**<br>Required |
| 3 | Action | alpha | **C** (Creation)<br>**M** (Modification)<br>**S** (Deletion)<br>Required |
| 4 | External unique ID for the source job | alpha | Job identifier for the ERP<br>Required |
| 5 | External unique ID for the destination job | alpha | Required |
| 6 | Link duration | Num | **0** for a simple end - start link.<br>**n** If n > 0: link with n minutes gap.<br>If n < 0: link with n minutes overlap.<br>Required |

## Link modifications (M)

1. The 5 first zones are required as they form the key used to formally identify the link and action to perform.

2. Consequently, field 6 (Link duration) is the only one modifiable.

3. If field 6 contains the @ symbol, this means that nothing is modified.

## Link deletions (S)

1. Deleting a link does not delete the linked jobs.

2. Deleting a link does not delete the other links of the route.

**Example of instruction to import a link (in creation, source and target jobs in green):**

```
LINK;4;C-NOWARNING;17030187-1-1-1-0/020;17030187-1-1-1-0/030;0
```

## Importing memos

Memos contain user comments.

| No. | Designation | Format | Comments |
|---|---|---|---|
| 1 | Data type | alpha | Value: **MEMO**<br>Required |
| 2 | Version of import format | alpha | Value: **4**<br>Required |
| 3 | Action | alpha | **CM** (Creation when the memo does not exist, Modification if it already exists)<br>Required |
| 4 | Job external identifier (ERP ID) | alpha | |
| 5 | Direct Planning internal identifier | Num | |
| 6 | Login of Direct Planning user | alpha | If internal identifier of DP user does not exist |
| 7 | Comment text | alpha | To create a line break: \\r<br>Semicolons are replaced by commas.<br>Double quotes are doubled. |
| 8 | State of the alert linked to the comment | | |
| 9 | Date of comment modification | datetime | |
| 10 | Date of comment comment alert | datetime | |

## Importing calendar modifications

Direct Planning enables you to import directives for creating / modifying / deleting standard days and weeks based on their code or designation (a single file can contain several import directives).

| N° | Désignation | Format | Observations |
|---|---|---|---|
| 1 | Directive | alpha | Possible balues :<br>**CAL-JT-L: Modif. of std day using its designation**<br>**CAL-JT-C: Modif. of std day using its code**<br>**CAL-ST-L: Modif. of std week using its designation**<br>**CAL-ST-C: Modif. of std week using its code**<br>Required |
| 2 | Version of import format | alpha | Value : **4**<br>Required |
| 3 | Action | alpha | **C** (Creation)<br>**M** (Modification)<br>**S** (Deletion)<br>Required |
| 4 | Machine code | alpha | Machine code<br>Required |
| 5 | Date of the standard day or week | DD/MM/YYYY | **Date of**<br>**std day (CAL-JT-L and CAL-JT-C directives)**<br>**start of std week (CAL-ST-L and CAL-ST-C directives)**<br>Required |

| N° | Désignation | Format | Observations |
|---|---|---|---|
| 6 | Designation / Code of the std day or week | alpha | **Designation (or code) of the day (or week) to impose**<br>**Notes:**<br>• **An empty value can be used to delete the std day or week previously imposed**<br>• **The @ value will not trigger any processing (no modification)**<br>**Required** |

## Colour codes

| Html name | RGB code |
|---|---|
| AliceBlue | 240,248,255 |
| AntiqueWhite | 250,235,215 |
| Aqua | 0,255,255 |
| Aquamarine | 127,255,212 |
| Azure | 240,255,255 |
| Beige | 245,245,220 |
| Bisque | 255,228,196 |
| Black | 0,0,0 |
| BlanchedAlmond | 255,235,205 |
| Blue | 0,0,255 |
| BlueViolet | 138,43,226 |
| Brown | 165,42,42 |
| BurlyWood | 222,184,135 |
| CadetBlue | 95,158,160 |
| Chartreuse | 127,255,0 |
| Chocolate | 210,105,30 |
| Coral | 255,127,80 |
| CornflowerBlue | 100,149,237 |
| Cornsilk | 255,248,220 |
| Crimson | 237,164,61 |
| Cyan | 0,255,255 |
| DarkBlue | 0,0,139 |
| DarkCyan | 0,139,139 |
| DarkGoldenRod | 184,134,11 |
| DarkGray | 167,167,167 |
| DarkGreen | 0,100,0 |
| DarkKhaki | 189,183,107 |
| DarkMagenta | 139,0,139 |
| DarkOliveGreen | 85,107,47 |
| Darkorange | 255,140,0 |
| DarkOrchid | 153,50,204 |
| DarkRed | 139,0,0 |
| DarkSalmon | 233,150,122 |
| DarkSeaGreen | 143,188,143 |
| DarkSlateBlue | 72,61,139 |
| DarkSlateGray | 47,79,79 |
| DarkTurquoise | 0,206,209 |
| DarkViolet | 148,0,211 |
| DeepPink | 255,20,147 |
| DeepSkyBlue | 0,191,255 |
| DimGray | 105,105,105 |
| DodgerBlue | 30,144,255 |
| Feldspar | 209,146,117 |
| FireBrick | 178,34,34 |
| FloralWhite | 255,250,240 |
| ForestGreen | 34,139,34 |
| Fuchsia | 255,0,255 |
| Gainsboro | 220,220,220 |

| Html name | RGB code |
|---|---|
| GhostWhite | 248,248,255 |
| Gold | 255,215,0 |
| GoldenRod | 218,165,32 |
| Gray | 190,190,190 |
| Green | 0,128,0 |
| GreenYellow | 173,255,47 |
| HoneyDew | 240,255,240 |
| HotPink | 255,105,180 |
| IndianRed | 205,92,92 |
| Indigo | 75,0,130 |
| Ivory | 255,255,240 |
| Khaki | 240,230,140 |
| Lavender | 230,230,250 |
| LavenderBlush | 255,240,245 |
| LawnGreen | 124,252,0 |
| LemonChiffon | 255,250,205 |
| LightBlue | 173,216,230 |
| LightCoral | 240,128,128 |
| LightCyan | 224,255,255 |
| LightGoldenRodYellow | 250,250,210 |
| LightGreen | 144,238,144 |
| LightGrey | 211,211,211 |
| LightPink | 255,182,193 |
| LightSalmon | 255,160,122 |
| LightSeaGreen | 32,178,170 |
| LightSkyBlue | 135,206,250 |
| LightSlateBlue | 132,112,255 |
| LightSlateGray | 119,136,153 |
| LightSteelBlue | 176,196,222 |
| LightYellow | 255,255,224 |
| Lime | 0,255,0 |
| LimeGreen | 50,205,50 |
| Linen | 250,240,230 |
| Magenta | 255,0,255 |
| Maroon | 128,0,0 |
| MediumAquaMarine | 102,205,170 |
| MediumBlue | 0,0,205 |
| MediumOrchid | 186,85,211 |
| MediumPurple | 147,112,219 |
| MediumSeaGreen | 60,179,113 |
| MediumSlateBlue | 123,104,238 |
| MediumSpringGreen | 0,250,154 |
| MediumTurquoise | 72,209,204 |
| MediumVioletRed | 199,21,133 |
| MidnightBlue | 25,25,112 |
| MintCream | 245,255,250 |
| MistyRose | 255,228,225 |
| Moccasin | 255,228,181 |

| Html name | RGB code |
|---|---|
| NavajoWhite | 255,222,173 |
| Navy | 0,0,128 |
| OldLace | 253,245,230 |
| Olive | 128,128,0 |
| OliveDrab | 107,142,35 |
| Orange | 255,165,0 |
| OrangeRed | 255,69,0 |
| Orchid | 218,112,214 |
| PaleGoldenRod | 238,232,170 |
| PaleGreen | 152,251,152 |
| PaleTurquoise | 175,238,238 |
| PaleVioletRed | 219,112,147 |
| PapayaWhip | 255,239,213 |
| PeachPuff | 255,218,185 |
| Peru | 205,133,63 |
| Pink | 255,192,203 |
| Plum | 221,160,221 |
| PowderBlue | 176,224,230 |
| Purple | 128,0,128 |
| Red | 255,0,0 |
| RosyBrown | 188,143,143 |
| RoyalBlue | 65,105,225 |
| SaddleBrown | 139,69,19 |
| Salmon | 250,128,114 |
| SandyBrown | 244,164,96 |
| SeaGreen | 46,139,87 |
| SeaShell | 255,245,238 |
| Sienna | 160,82,45 |
| Silver | 192,192,192 |
| SkyBlue | 135,206,235 |
| SlateBlue | 106,90,205 |
| SlateGray | 112,128,144 |
| Snow | 255,250,250 |
| SpringGreen | 0,255,127 |
| SteelBlue | 70,130,180 |
| Tan | 210,180,140 |
| Teal | 0,128,128 |
| Thistle | 216,191,216 |
| Tomato | 255,99,71 |
| Turquoise | 64,224,208 |
| Violet | 238,130,238 |
| VioletRed | 208,32,144 |
| Wheat | 245,222,179 |
| White | 255,255,255 |
| WhiteSmoke | 245,245,245 |
| Yellow | 255,255,0 |
| YellowGreen | 154,205,50 |
| | |

# 6.2.4. Examples of use

☞ The WO data changed in the ERP

"Cancel and replace" import

(Instructions are truncated for readability purposes)

```
ENT1;4;CM;C54144;INDUSTRIA;;;;;;;;;;;RANDOM;;;;;;;;;
ENT2;4;CM;PS54144-0000814;ETUI MAGIC 6% 10ML;39.5 x 34 x 68;8U780A00;A2220;;;;;;;;RANDO
ENT3;4;CM;17030187-1-1;910855/1;VDR;;;;;;;;;;RANDOM;C54144;;;;;;;;
ENT4;4;CM;17030187-1-1-1;17030187-1-1-1;20000;SAINT-PIERRE DES CORPS;25/04/2017;26/04/2
DREF12;4;CM;A2220;A2220 (A112) PATTES ALTERNEES;RANDOM
DREF13;4;CM;EP07075;7075 - 30 poses;RANDOM
DREF14;4;CM;ZPA0017;ZPA0017 - PALETTE H 100X120 NIMP15 5 SEM CEINTUREE;RANDOM
DREF15;4;CM;ZCA1015;ZCA1015 - CA15-6543- CARN 598 X 324 X 200;RANDOM
```

The first four lines (dark green) create entities 1, 2, 3 and 4 (customer, product...) via **CM** action.
The next four lines (light green) create Reference data 12, 13, 14 and 15 (product, type...) via **CM** action.

```
TASK;4;S-NOERROR;17030187-1-1-1-1/*;;;;;;;;;;;
```

# 6.2.5. Course of import and logging

**REMINDER**

To set the import folder, click on **Configuration** > **General configuration** > **Automatic import**.

Warning

The files are processed in chronological order, according to their creation date. If two files share the same creation date, then they are processed by alphabetical order.
If sending files typed by instruction, filenames must be generated so as to take them into account in the right order.

Assuming that the import file is `D:\DirectPlanning\import_001.csv`

The import makes the following transactions:

- Creation of a time-stamped history folder, for example: `D:\DirectPlanning\histo\2018.02.01-12:00`.
- Saving of the schedule before import, as a dpl2 file in this folder.
- Actual achievement of the import.
- Creation of import detailed logs: `D:\DirectPlanning\histo\journal.log` and `D:\DirectPlanning\journal.log`.
- Each import file is moved to the time-stamped folder and the .ok extension is added if all records were processed successfully. Example: `D:\DirectPlanning\ histo\import_001.csv.ok`
- Each import file is moved to the time-stamped folder and the .err extension is added if there is at least one record in error in this file. Example: `D:\DirectPlanning\histo\import_001.csv.err`
- The scheduled is backed up after import, provided that no error was encountered during import and the automatic backup was not disabled.

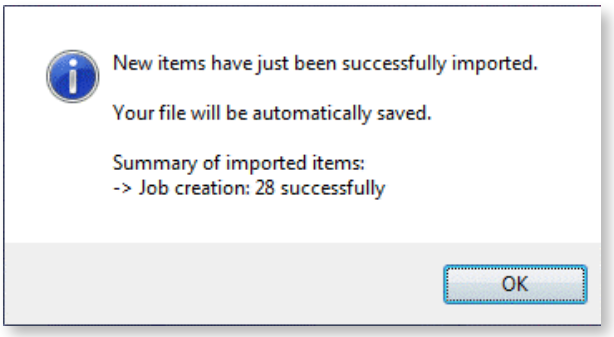
These transactions are performed for reasons of security (to avoid a file being imported more than once) and traceability (to maintain a history of the different imports and their outcome).

**Note**

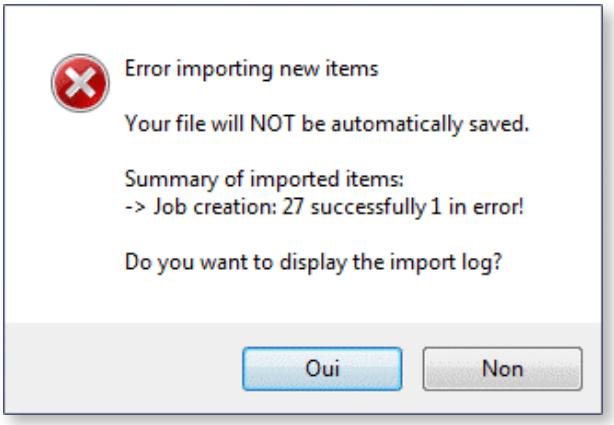
Logging of the schedule can quickly saturate disk space.
Remember the check how the automatic purge of imports is configured (**Configuration** > **General configuration** > **Automatic import**)

# 6.2.6. Import result

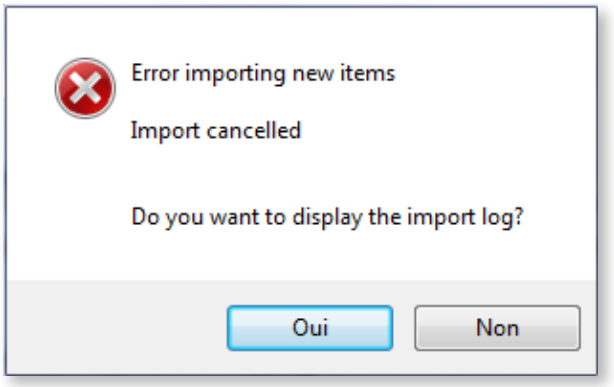
3 scenarios may arise:




◀ No error encountered.




◀ The encountered errors do not necessarily require to resume the import.




◀ The encountered errors require to resume the import.

Resuming procedure

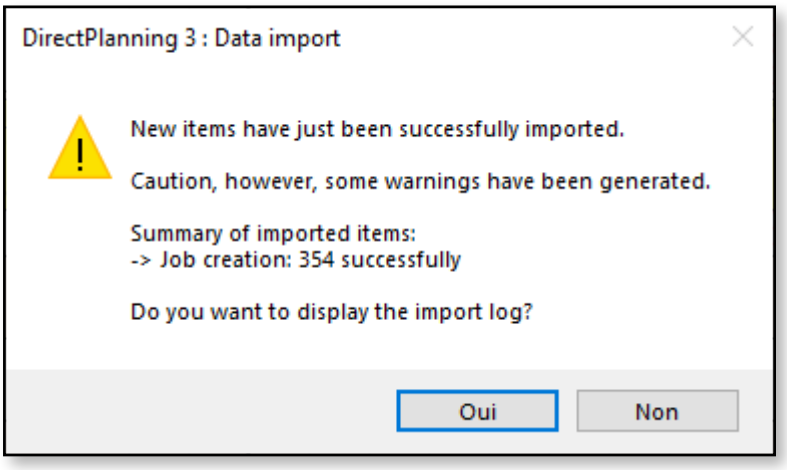
Following import, when closing the schedule without saving, 2 scenarios are possible:

1. Make the corrections in the program generating the files to import, regenerate the files to import and relaunch the import.

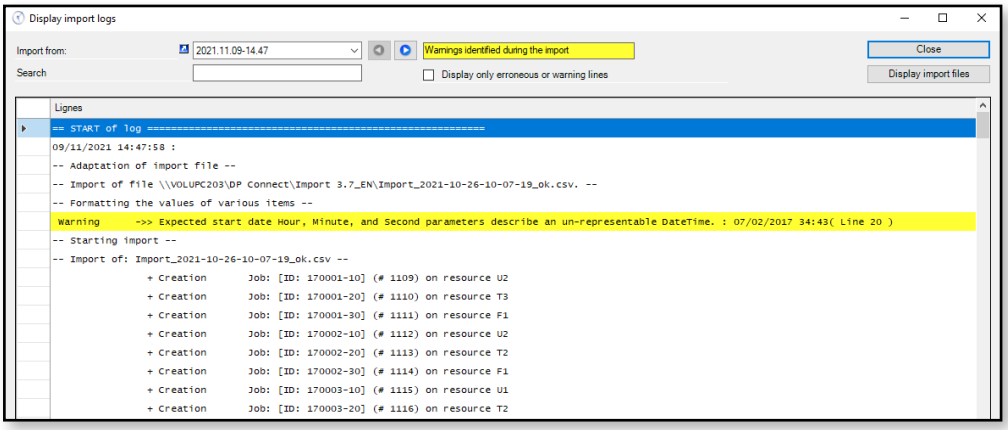
2. Put the affected files back in the import folder, delete the .err extension, directly edit the corresponding .csv files you relaunch the import.

## Import log

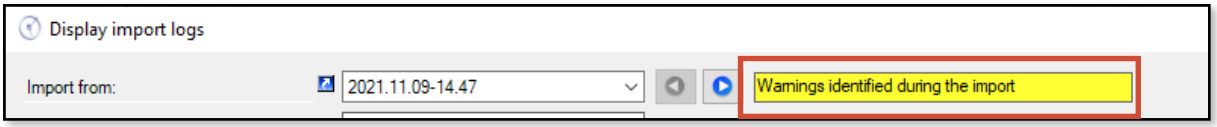
As just seen, in case of error or warning, Direct Planning enables you to open the import log:




It is displayed in a window which is embedded in Direct Planning. In the log, the warnings are displayed in yellow and the errors in red:

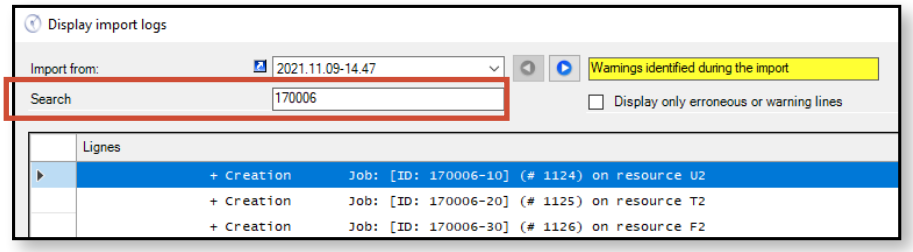



A quick filter is available to view only warnings and errors:

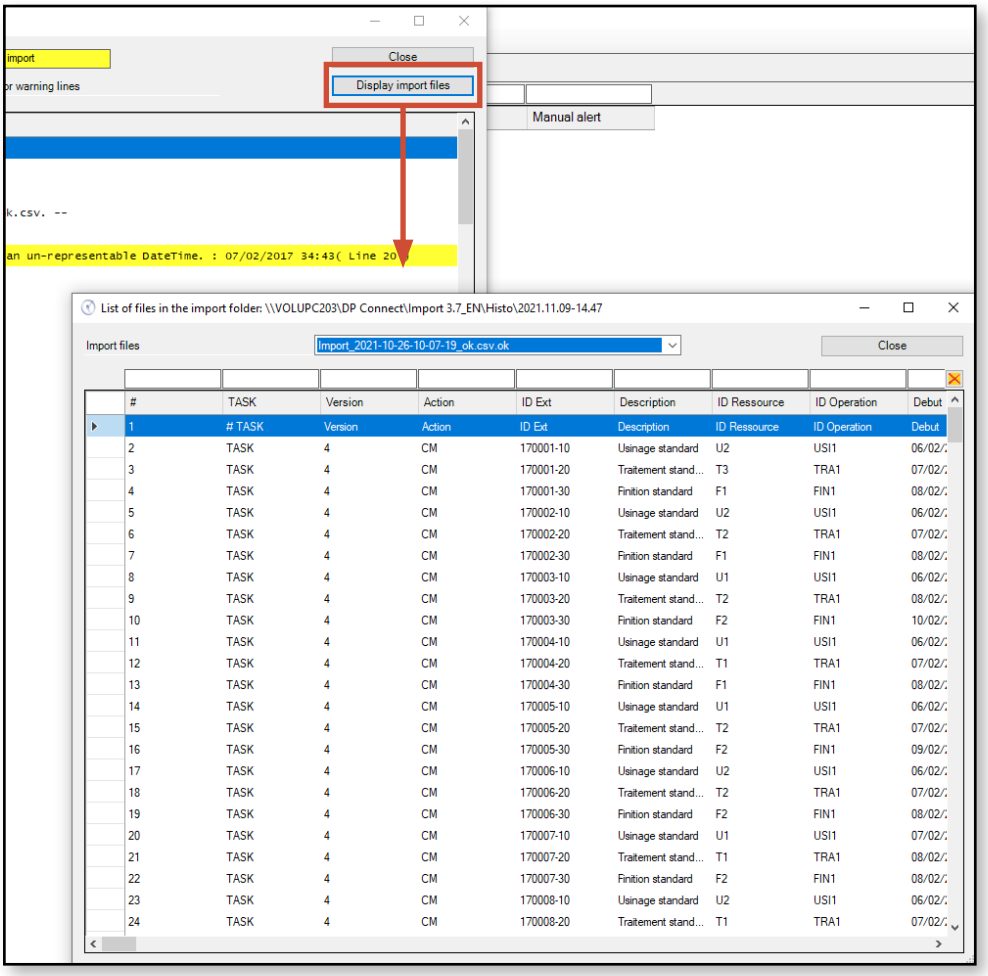



The search field enables you to find quickly a character string in the log.

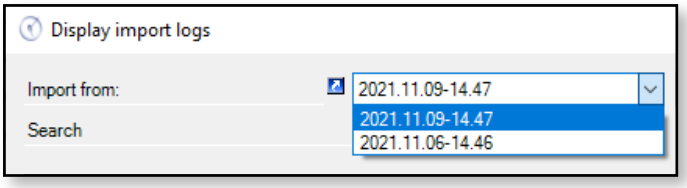
For example, this will allow us to find all the import lines associated with a WO number:



This log file also gives you access to the list of import files, in order to quickly review their content:




You can also browse quickly the import logs from previous imports:



# 6.3.1. Data export formats

Exporting Process Information

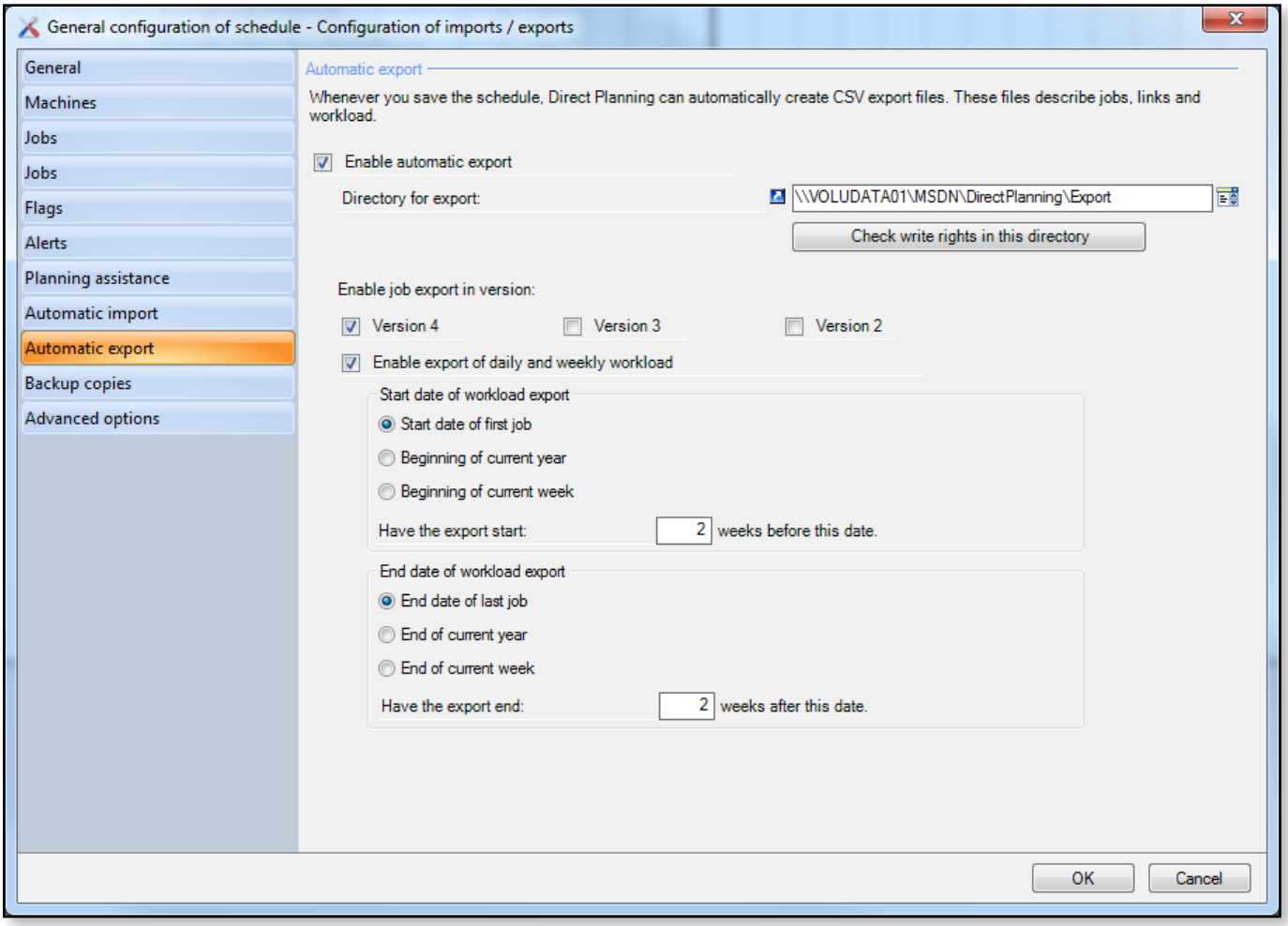
| No. | Designation | Format | Comments |
|---|---|---|---|
| 1 | Data type | alpha | Possible values: from **TASK-IP** |
| 2 | Version of export format | alpha | Value: **4** |
| 3 | Direct Planning identifier for this job | alpha | |
| 4 | Process Information number | Num | |
| 5 | Configurable area 1 | alpha | |
| 6 | Configurable area 2 | alpha | |
| 7 | Configurable area 3 | alpha | |
| 8 | Configurable area 4 | alpha | |
| 9 | Configurable area 5 | alpha | |
| 10 | Configurable area 6 | alpha | |
| 11 | Configurable area 7 | alpha | |
| 12 | Configurable area 8 | alpha | |
| 13 | Configurable area 9 | alpha | |
| 14 | Configurable area 10 | alpha | |

# 6.3. Exporting data

As discussed earlier, Direct Planning can generate files for third party applications (such as an ERP, CAPE, specific program or Excel macro).
Direct Planning exports jobs (with attached flags), links and optionally the daily and weekly workload.

The export is automatically generated each time the schedule is saved.

To configure the export, click on **Configuration** > **General configuration** > **Automatic export**:




## Characteristics of exported files

- CSV format
- Placed in the export folder configured in the screen above (**Configuration** > **General configuration** > **Automatic export**)
- Contain all the modifications made since the last backup.

Named:
- **export_task.csv** for jobs in the v1 format.

- **export_task_v2.csv** for jobs in the v2 format.
- **export_link.csv** for links in the v1 format (there is no v2 format for links).
- **export_calendar_day.csv** for calendars and the daily workload.
- **export_calendar_week.csv** for the weekly workload.

**Note**
The colon replaces the semicolon in all text zones of the exported file.
The formatted notes are exported as plain text, without formatting and carriage returns. These are replaced by the character string %/% (percent slash percent).

## Exporting jobs

| No. | Designation | Comments |
|---|---|---|
| 01 | Data type | Value: **TASK or TITLE**<br>Format: **alpha** |
| 02 | Version of import format | Values: **4**<br>Format: **alpha** |
| 03 | ERP unique identifier for this job | The purpose of this zone is to allow the third party application to recognise a job it previously transferred to Direct Planning via the import function.<br>For imported jobs, it contains the number assigned by the external software.<br>For jobs created in Direct Planning, it is set to 0 (zero) unless you give it a value during import. When a job is subdivided, the 2 resulting jobs are identified by #1 and #2 suffixes.<br>Format: **alpha** |
| 04 | Direct Planning unique identifier for this job | This zone contains the unique internal number assigned by Direct Planning.<br>Format: **alpha** |
| 05 | Date of update | Format: **datetime** |
| 06 | Job name | Format: **alpha** |
| 07 | Identifier of resource | Format: **alpha** |
| 08 | Designation of resource | Format: **alpha** |
| 09 | Operation identifier | Format: **alpha** |
| 10 | Operation designation | Format: **alpha** |
| 11 | Working unit identifier | Format: **alpha** |
| 12 | Working unit designation | Format: **alpha** |
| 13 | Start date and time | Format: **datetime*** ** |
| 14 | End date and time | Format: **datetime*** ** |
| 15 | Entered earliest start date and time | Format: **datetime*** ** |
| 16 | Earliest start date and time derived from flags (with element receipt constraint) | Format: **datetime*** ** |
| 17 | Earliest start date and time forced by upstream jobs of route | Format: **datetime*** ** |
| 18 | Actual earliest start date and time | Format: **datetime*** ** |
| 19 | Earliest start date and time of route | Format: **datetime*** ** |
| 20 | Latest end date and time entered | Format: **datetime*** ** |
| 21 | Latest end date and time forced by downstream jobs of route | Format: **datetime*** ** |
| 22 | Actual latest end date and time | Format: **datetime*** ** |
| 23 | Latest end date and time of route | Format: **datetime*** ** |
| *** Datetime columns use the **DD.MM.YYYY hh:mm** format (with a space between the year and time). | | |
| 24 | Declared start date and time of job | |
| 25 | Declared end date and time of job | |
| 26 | Former start date and time of job | |

| No. | Designation | Comments |
|---|---|---|
| 27 | Former end date and time of job | |
| 28 | Method of time entry | |
| 29 | Planned quantity | Format: **quantity** |
| 30 | Percentage of variable waste | Format: **decimal** |
| 31 | Nbr of WU to produce per operative WU | Format: **decimal** |
| 32 | Nbr of work rate WU per operative WU | Format: **decimal** |
| 33 | Performed quantity | |
| 34 | Non-compliant quantity | |
| 35 | Started job | |
| 36 | Completed job | |
| 37 | Progress percentage | Value: from **0** to **100**<br>Format: **num** |
| 38 | Transition duration (deprecated) | Format: **duration** |
| 39 | Planned setting duration | Format: **duration** |
| 40 | Performed setting duration | Format: **duration** |
| 41 | Performed duration of setting stops | |
| 42 | Setting completed? | Format: **O/N** |
| 43 | Scheduled setting duration | Format: **duration** |
| 44 | Planned running duration | Format: **duration** |
| 45 | Performed running duration | Format: **duration** |
| 46 | Duration of downtime | Format: **duration** |
| 47 | Scheduled running duration | Format: **duration** |
| 48 | Total planned duration | Format: **duration** |
| 49 | Total performed duration | Format: **duration** |
| 50 | Total scheduled duration (ex-transition times) | Format: **duration** |
| 51 | Total scheduled duration including transition times | Format: **duration** |
| 52 | Locked job | Value: **O/N**<br>Format: **alpha** |
| 53 | Job to schedule | Value: **O/N**<br>Format: **alpha** |
| 54 | Job alert code | **0**: No positioning alert<br>**1**: The job starts too early.<br>**2**: Job may end too late.<br>**3**: Job ends too late.<br>Format: **num** |

| No. | Designation | Comments |
|---|---|---|
| 55 | Cycle alert code | **0**: No cycle<br>**1**: The job is part of a cycle which is applies on the route of this job<br>**2**: The job is caught in a cycle. A job in cycle on the resource blocks the job and prevents its movement.<br>The job does not actually belong to the cycle.<br>**3**: Impossible movement<br>Format: **num** |
| 56 | Alert code of multi-status flag pending element receipt | **0**: No flag in alert<br>**1**: At least one **Element not received** flag in alert<br>Format: **num** |
| 57 | Manual alert code | **0**: No manual alert<br>**1**: Manual alert positioned<br>Format: **num** |
| 58 | Manual alert message | Format: **alpha** |
| 59 | Identifier of entity 1 | Format: **alpha** |
| 60 | Designation of entity 1 | Format: **alpha** |
| 61 | Identifier of entity 2 | Format: **alpha** |
| 62 | Designation of entity 2 | Format: **alpha** |
| 63 | Identifier of entity 3 | Format: **alpha** |
| 64 | Designation of entity 3 | Format: **alpha** |
| 65 | Identifier of entity 4 | Format: **alpha** |
| 66 | Designation of entity 4 | Format: **alpha** |
| 67 | Identifier of entity 5 | Format: **alpha** |
| 68 | Designation of entity 5 | Format: **alpha** |
| 69 | Identifier of entity 6 | Format: **alpha** |
| 70 | Designation of entity 6 | Format: **alpha** |
| 71 | Identifier of entity 7 | Format: **alpha** |
| 72 | Designation of entity 7 | Format: **alpha** |
| 73 | Identifier of entity 8 | Format: **alpha** |
| 74 | Designation of entity 8 | Format: **alpha** |
| 75 | Identifier of entity 9 | Format: **alpha** |
| 76 | Designation of entity 9 | Format: **alpha** |
| 77 | Identifier of entity 10 | Format: **alpha** |
| 78 | Designation of entity 10 | Format: **alpha** |
| 79 | Free zone 1 | Format: **alpha** |
| 80 | Free zone 2 | Format: **alpha** |
| 81 | Free zone 3 | Format: **alpha** |
| 82 | Free zone 4 | Format: **alpha** |
| 83 | Free zone 5 | Format: **alpha** |
| 84 | Free zone 6 | Format: **alpha** |
| 85 | Free zone 7 | Format: **alpha** |
| 86 | Free zone 8 | Format: **alpha** |
| 87 | Free zone 9 | Format: **alpha** |

| No. | Designation | Comments |
|---|---|---|
| 88 | Free zone 10 | Format: **alpha** |

| No. | Designation | Comments |
|---|---|---|
| 89 | Identifier of technical element 1 | Format: **alpha** |
| 90 | Designation of technical element 1 | Format: **alpha** |
| 91 | Identifier of technical element 2 | Format: **alpha** |
| 92 | Designation of technical element 2 | Format: **alpha** |
| 93 | Identifier of technical element 3 | Format: **alpha** |
| 94 | Designation of technical element 3 | Format: **alpha** |
| 95 | Identifier of technical element 4 | Format: **alpha** |
| 96 | Designation of technical element 4 | Format: **alpha** |
| 97 | Identifier of technical element 5 | Format: **alpha** |
| 98 | Designation of technical element 5 | Format: **alpha** |
| 99 | Identifier of technical element 6 | Format: **alpha** |
| 100 | Designation of technical element 6 | Format: **alpha** |
| 101 | Identifier of technical element 7 | Format: **alpha** |
| 102 | Designation of technical element 7 | Format: **alpha** |
| 103 | Identifier of technical element 8 | Format: **alpha** |
| 104 | Designation of technical element 8 | Format: **alpha** |
| 105 | Identifier of technical element 9 | Format: **alpha** |
| 106 | Designation of technical element 9 | Format: **alpha** |
| 107 | Identifier of technical element 10 | Format: **alpha** |
| 108 | Designation of technical element 10 | Format: **alpha** |
| 109 | Identifier of technical element 11 | Format: **alpha** |
| 110 | Designation of technical element 11 | Format: **alpha** |
| 111 | Identifier of technical element 12 | Format: **alpha** |
| 112 | Designation of technical element 12 | Format: **alpha** |
| 113 | Identifier of technical element 13 | Format: **alpha** |
| 114 | Designation of technical element 13 | Format: **alpha** |
| 115 | Identifier of technical element 14 | Format: **alpha** |
| 116 | Designation of technical element 14 | Format: **alpha** |
| 117 | Identifier of technical element 15 | Format: **alpha** |
| 118 | Designation of technical element 15 | Format: **alpha** |
| 119 | Identifier of technical element 16 | Format: **alpha** |
| 120 | Designation of technical element 16 | Format: **alpha** |
| 121 | Identifier of technical element 17 | Format: **alpha** |
| 122 | Designation of technical element 17 | Format: **alpha** |
| 123 | Identifier of technical element 18 | Format: **alpha** |
| 124 | Designation of technical element 18 | Format: **alpha** |

| No. | Designation | Comments |
|---|---|---|
| 125 | Identifier of technical element 19 | Format: **alpha** |
| 126 | Designation of technical element 19 | Format: **alpha** |
| 127 | Identifier of technical element 20 | Format: **alpha** |
| 128 | Designation of technical element 20 | Format: **alpha** |

## Exporting flags

| No. | Designation | Comments |
|---|---|---|
| | Flag 1 | |
| 129 | Status | Values:<br>**-1**: Unconfigured flag<br>**0**: Inactive flag<br>**1**: Active indicative flag or multi-status flag with status 1<br>**2**: Multi-status flag with status 2<br>**3**: Multi-status flag with status 3<br>**4**: Multi-status flag with status 4<br>**5**: Multi-status flag with status 5<br>Format: **num** |
| 130 | Status of receipt<br>(For<br>Waiting for element receipt flags) | **0**: The flag is not a **Waiting for element receipt** flag<br>**1**: Waiting for element receipt<br>**2**: Received element<br>Format: **num** |
| 131 | Alert code on this flag | **0**: No alert on this flag<br>**1**: Expired planned receipt date for a waiting for element receipt flag. |
| 132 | Planned date of receipt | Format: **datetime*** ** |
| 133 | Actual date of receipt | Format: **datetime*** ** |
| *** Datetime columns use the **DD.MM.YYYY hh:mm** format (with a space between the year and time). | | |
| 134 | Configurable area 1 | Format: **alpha** |
| 135 | Configurable area 2 | Format: **alpha** |
| 136 | Configurable area 3 | Format: **alpha** |
| 137 | Configurable area 4 | Format: **alpha** |
| 138 | Configurable area 5 | Format: **alpha** |
| 139 | Configurable area 6 | Format: **alpha** |
| 140 | Configurable area 7 | Format: **alpha** |
| 141 | Configurable area 8 | Format: **alpha** |
| 142 | Configurable area 9 | Format: **alpha** |
| 143 | Configurable area 10 | Format: **alpha** |
| | Flag 2 | |

| No. | Designation | Comments |
|---|---|---|
| 144 | Status | Values:<br>**-1**: Unconfigured flag<br>**0**: Inactive flag<br>**1**: Active indicative flag or multi-status flag with status 1<br>**2**: Multi-status flag with status 2<br>**3**: Multi-status flag with status 3<br>**4**: Multi-status flag with status 4<br>**5**: Multi-status flag with status 5<br>Format: **num** |
| 145 | Status of receipt<br>(For<br>Waiting for element receipt flags) | **0**: The flag is not a **Waiting for element receipt** flag<br>**1**: Waiting for element receipt<br>**2**: Received element<br>Format: **num** |
| 146 | Alert code on this flag | **0**: No alert on this flag<br>**1**: Expired planned receipt date for a waiting for element receipt flag. |
| 147 | Planned date of receipt | Format: **datetime** |
| 148 | Actual date of receipt | Format: **datetime** |
| 149<br>▼<br>158 | Configurable area 1<br><br>Configurable area 10 | Format: **alpha** |
| | Flag 3 | |
| 159 | Status | Values:<br>**-1**: Unconfigured flag<br>**0**: Inactive flag<br>**1**: Active indicative flag or multi-status flag with status 1<br>**2**: Multi-status flag with status 2<br>**3**: Multi-status flag with status 3<br>**4**: Multi-status flag with status 4<br>**5**: Multi-status flag with status 5<br>Format: **num** |
| 160 | Status of receipt<br>(For<br>Waiting for element receipt flags) | **0**: The flag is not a **Waiting for element receipt** flag<br>**1**: Waiting for element receipt<br>**2**: Received element<br>Format: **num** |
| 161 | Alert code on this flag | **0**: No alert on this flag<br>**1**: Expired planned receipt date for a waiting for element receipt flag. |
| 162 | Planned date of receipt | Format: **datetime** |
| 163 | Actual date of receipt | Format: **datetime** |
| 164<br>▼<br>173 | Configurable area 1<br><br>Configurable area 10 | Format: **alpha** |
| | Flag 4 | |
| 174 | Status | Values:<br>**-1**: Unconfigured flag<br>**0**: Inactive flag<br>**1**: Active indicative flag or multi-status flag with status 1<br>**2**: Multi-status flag with status 2<br>**3**: Multi-status flag with status 3<br>**4**: Multi-status flag with status 4<br>**5**: Multi-status flag with status 5<br>Format: **num** |

| No. | Designation | Comments |
|---|---|---|
| 175 | Status of receipt<br>(For<br>Waiting for element receipt flags) | **0**: The flag is not a **Waiting for element receipt** flag<br>**1**: Waiting for element receipt<br>**2**: Received element<br>Format: **num** |
| 176 | Alert code on this flag | **0**: No alert on this flag<br>**1**: Expired planned receipt date for a waiting for element receipt flag. |
| 177 | Planned date of receipt | Format: **datetime** |
| 178 | Actual date of receipt | Format: **datetime** |
| 179<br>▼<br>188 | Configurable area 1<br><br>Configurable area 10 | Format: **alpha** |
| | Flag 5 | |
| 189 | Status | Values:<br>**-1**: Unconfigured flag<br>**0**: Inactive flag<br>**1**: Active indicative flag or multi-status flag with status 1<br>**2**: Multi-status flag with status 2<br>**3**: Multi-status flag with status 3<br>**4**: Multi-status flag with status 4<br>**5**: Multi-status flag with status 5<br>Format: **num** |
| 190 | Status of receipt<br>(For<br>Waiting for element receipt flags) | **0**: The flag is not a **Waiting for element receipt** flag<br>**1**: Waiting for element receipt<br>**2**: Received element<br>Format: **num** |
| 191 | Alert code on this flag | **0**: No alert on this flag<br>**1**: Expired planned receipt date for a waiting for element receipt flag. |
| 192 | Planned date of receipt | Format: **datetime** |
| 193 | Actual date of receipt | Format: **datetime** |
| 194<br>▼<br>203 | Configurable area 1<br><br>Configurable area 10 | Format: **alpha** |
| | Flag 6 | |
| 204 | Status | Values:<br>**-1**: Unconfigured flag<br>**0**: Inactive flag<br>**1**: Active indicative flag or multi-status flag with status 1<br>**2**: Multi-status flag with status 2<br>**3**: Multi-status flag with status 3<br>**4**: Multi-status flag with status 4<br>**5**: Multi-status flag with status 5<br>Format: **num** |
| 205 | Status of receipt<br>(For<br>Waiting for element receipt flags) | **0**: The flag is not a **Waiting for element receipt** flag<br>**1**: Waiting for element receipt<br>**2**: Received element<br>Format: **num** |
| 206 | Alert code on this flag | **0**: No alert on this flag<br>**1**: Expired planned receipt date for a waiting for element receipt flag. |
| 207 | Planned date of receipt | Format: **datetime** |
| 208 | Actual date of receipt | Format: **datetime** |

| No. | Designation | Comments |
|---|---|---|
| 209 ▼ 218 | Configurable area 1<br><br>Configurable area 10 | Format: **alpha** |
| | Flag 7 | |
| 219 | Status | Values:<br>**-1**: Unconfigured flag<br>**0**: Inactive flag<br>**1**: Active indicative flag or multi-status flag with status 1<br>**2**: Multi-status flag with status 2<br>**3**: Multi-status flag with status 3<br>**4**: Multi-status flag with status 4<br>**5**: Multi-status flag with status 5<br>Format: **num** |
| 220 | Status of receipt<br>(For<br>Waiting for element receipt flags) | **0**: The flag is not a **Waiting for element receipt** flag<br>**1**: Waiting for element receipt<br>**2**: Received element<br>Format: **num** |
| 221 | Alert code on this flag | **0**: No alert on this flag<br>**1**: Expired planned receipt date for a waiting for element receipt flag. |
| 222 | Planned date of receipt | Format: **datetime** |
| 223 | Actual date of receipt | Format: **datetime** |
| 224 ▼ 233 | Configurable area 1<br><br>Configurable area 10 | Format: **alpha** |
| | Flag 8 | |
| 234 | Status | Values:<br>**-1**: Unconfigured flag<br>**0**: Inactive flag<br>**1**: Active indicative flag or multi-status flag with status 1<br>**2**: Multi-status flag with status 2<br>**3**: Multi-status flag with status 3<br>**4**: Multi-status flag with status 4<br>**5**: Multi-status flag with status 5<br>Format: **num** |
| 235 | Status of receipt<br>(For<br>Waiting for element receipt flags) | **0**: The flag is not a **Waiting for element receipt** flag<br>**1**: Waiting for element receipt<br>**2**: Received element<br>Format: **num** |
| 236 | Alert code on this flag | **0**: No alert on this flag<br>**1**: Expired planned receipt date for a waiting for element receipt flag. |
| 237 | Planned date of receipt | Format: **datetime** |
| 238 | Actual date of receipt | Format: **datetime** |
| 239 ▼ 248 | Configurable area 1<br><br>Configurable area 10 | Format: **alpha** |
| | Flag 9 | |

| No. | Designation | Comments |
|---|---|---|
| 249 | Status | Values:<br>**-1**: Unconfigured flag<br>**0**: Inactive flag<br>**1**: Active indicative flag or multi-status flag with status 1<br>**2**: Multi-status flag with status 2<br>**3**: Multi-status flag with status 3<br>**4**: Multi-status flag with status 4<br>**5**: Multi-status flag with status 5<br>Format: **num** |
| 250 | Status of receipt<br>(For<br>Waiting for element receipt flags) | **0**: The flag is not a **Waiting for element receipt** flag<br>**1**: Waiting for element receipt<br>**2**: Received element<br>Format: **num** |
| 251 | Alert code on this flag | **0**: No alert on this flag<br>**1**: Expired planned receipt date for a waiting for element receipt flag. |
| 252 | Planned date of receipt | Format: **datetime** |
| 253 | Actual date of receipt | Format: **datetime** |
| 254<br>▼<br>263 | Configurable area 1<br><br>Configurable area 10 | Format: **alpha** |
| | Flag 10 | |
| 264 | Status | Values:<br>**-1**: Unconfigured flag<br>**0**: Inactive flag<br>**1**: Active indicative flag or multi-status flag with status 1<br>**2**: Multi-status flag with status 2<br>**3**: Multi-status flag with status 3<br>**4**: Multi-status flag with status 4<br>**5**: Multi-status flag with status 5<br>Format: **num** |
| 265 | Status of receipt<br>(For<br>Waiting for element receipt flags) | **0**: The flag is not a **Waiting for element receipt** flag<br>**1**: Waiting for element receipt<br>**2**: Received element<br>Format: **num** |
| 266 | Alert code on this flag | **0**: No alert on this flag<br>**1**: Expired planned receipt date for a waiting for element receipt flag. |
| 267 | Planned date of receipt | Format: **datetime** |
| 268 | Actual date of receipt | Format: **datetime** |
| 269<br>▼<br>278 | Configurable area 1<br><br>Configurable area 10 | Format: **alpha** |

## Exporting links

| No. | Designation | Comments |
|---|---|---|
| 1 | Data type | Value: **LINK** (or **TITLE**)<br>Format: **alpha** |
| 2 | Version of export format | Value: **4**<br>Format: **alpha** |
| 3 | Direct Planning identifier of source job | Format: **alpha** |
| 4 | Direct Planning identifier of destination job | Format: **alpha** |
| 5 | External identifier of source job | Format: **alpha** |
| 6 | External identifier of destination job | Format: **alpha** |
| 7 | Link duration | Format: **num** |

## Exporting memos

| No. | Designation | Comments |
|---|---|---|
| 1 | Data type | Value: **LINK** (or **TITLE**)<br>Format: **alpha** |
| 2 | Version of export format | Value: **4**<br>Format: **alpha** |
| 3 | External identifier of job (ERP ID) | Format: **alpha** |
| 4 | Direct Planning internal identifier | Format: **alpha** |
| 5 | Login of Direct Planning user | Format: **alpha** |
| 6 | Comment text | To create a line break: \\r<br>Semicolons are replaced by commas.<br>Double quotes are doubled. |
| 7 | State of alert linked to comment | |
| 8 | Comment modification date | |
| 9 | Comment alert date | |

## Calendars and daily workload

The exported file contains only one type of record: the hours worked by day and by resource (**DAILY**). 17 fields exported, translating into 16 semicolons.

The first line of the exported file is a header line to ease the identification of columns (data type = **TITLE**).

| No. | Designation | Comments |
|---|---|---|
| 1 | Data type | Value: **DAILY** (or **TITLE**)<br>Format: **alpha** |
| 2 | Version of export format | Value: **1**<br>Format: **alpha** |
| 3 | Date | Format: **dd/mm/yyyy** |
| 4 | Direct Planning identifier of the resource | Format: **alpha** |
| 5 | Work capacity for this resource at this date | In minutes<br>Format: **num** |
| 6 | Actual workload for this resource at this date | In minutes<br>Format: **num** |
| 7 | Workload percentage for this resource at this date | = zone 6/zone 5 X 100<br>Format: **num** |
| 8 | Range start 1 | 00:00 as start time means midnight of the day.<br>00:00 as end time means midnight of the next day.<br>Start and date time not entered: unused time range<br>Format: hh:mm |
| 9 | Range end 1 | |
| 10 | Range start 2 | |
| 11 | Range end 2 | |
| 12 | Range start 3 | |
| 13 | Range end 3 | |
| 14 | Range start 4 | |
| 15 | Range end 4 | |
| 16 | Range start 5 | |
| 17 | Range end 5 | |

**Warning**
If you open the **export_calendar_day.csv** file in Microsoft Excel and the software is configured to not display zero values, confusion may arise as 00:00 values no longer appear, mixing up 24 hour and zero hour work capacity cases!

## Weekly workload

This file indicates the workload and work capacity by week and by resource.
The exported file contains only one type of record: the hours worked by week and by resource (**WEEKLY**).
8 fields exported, translating into 7 semicolons.

| No. | Designation | Comments |
|---|---|---|
| 1 | Data type | Value: **WEEKLY** (or **TITLE**)<br>Format: **alpha** |
| 2 | Version of export format | Value: **1**<br>Format: **alpha** |
| 3 | Week number | Format: **num** |
| 4 | Week start date | Format: **dd/mm/yyyy** |
| 5 | Direct Planning identifier of the resource | Format: **alpha** |
| 6 | Work capacity of this resource for this week | In minutes<br>Format: **num** |
| 7 | Actual workload of this resource for this week | In minutes<br>Format: **num** |
| 8 | Workload percentage of this resource for this week | = zone 7/zone 6 X 100<br>Format: **num** |

**Note**
The week spreads from Monday to Sunday.

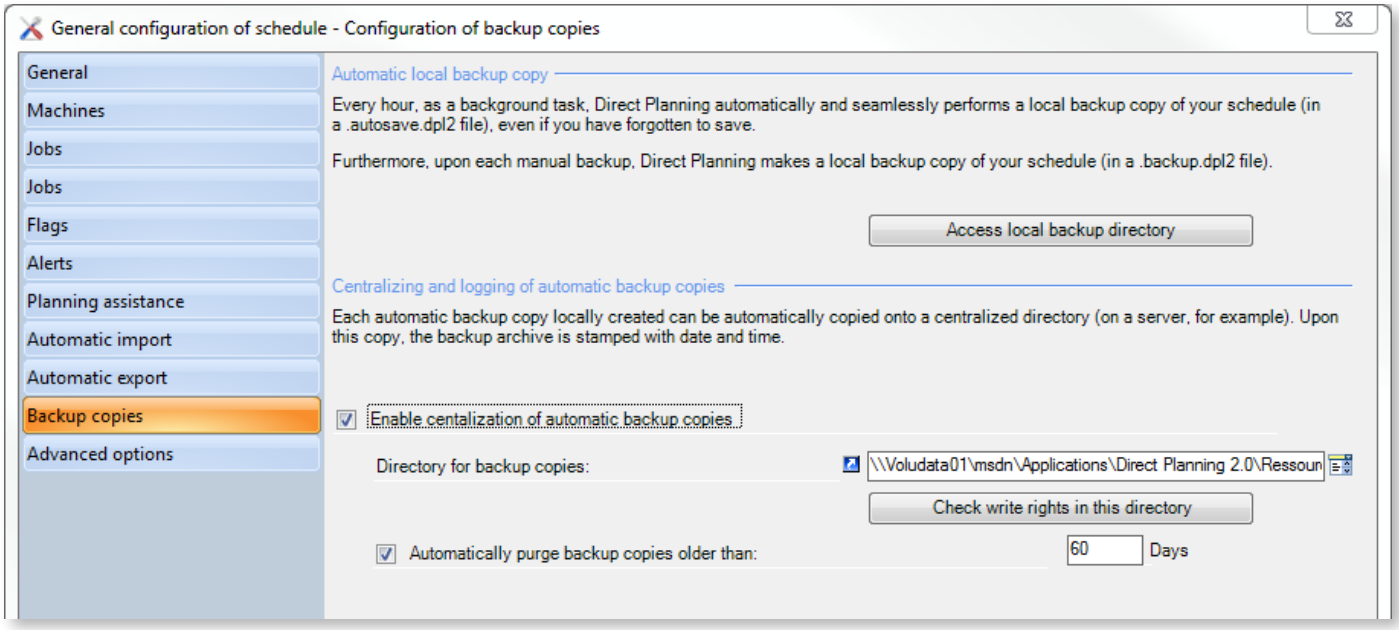
# 7. Administration

**ADMINISTRATION**

This section is, by definition, fully dedicated to the Direct Planning administrator.

## 7.1. Managing your schedule backups

**Configuration** > **General configuration** > **Backup copies**




Backup copies are made in the DPL2 format.

What is the DPL2 format?

Schedules are saved in a SQL Server database.
Therefore, they are not materialised by files which can be copied in the explorer or with a backup management tool.
However, each schedule can be exported in a DPL2 file which can be copied or saved with any Windows-based tool.

Local backup

Direct Planning's automatic backup provides basic security.
It is performed every hour, even when users do not purposely perform the backup. Should an incident occur, this allows the recovery of a recent backup copy.

The backup is performed in the following folder:
`C:\Users\[utilisateur]\AppData\Roaming\Volume Software\DirectPlanning 2\backup`

Click on Access local backup directory to reach this folder directly.

## Centralised (network) backup

Further security is provided by saving your schedule on another machine, in a shared and centralised folder. To do this, check the corresponding box and specify the backup folder by clicking on the icon on the right.
This folder centralises all backups performed by all computers.
It can integrate with the overall framework of backup procedure in your enterprise.
Click on Check write rights in this directory to check that you have writing permissions in this folder.

## Backup purge

Finally, you can request the automatic purge of outdated backups by checking the corresponding box. The age of backups can be configured: 60 days by default.

## Backup summary

In this table:

- Manual backups are those purposely launched by users.
- Automatic backups are those automatically launched by Direct Planning.
- Critical backups are those performed automatically when a crash occurs. They allow the recovery of crucial information. You can also send it to us for diagnostic purposes.

| Backup | Local folder | Centralisation folder (where appropriate) |
|---|---|---|
| Manual | [Schedule name].[Num].backup.dpl2 | [Schedule name].[Num].backup.dpl2<br>[Schedule name].[Num].backup.[date].dpl2 |
| Automatic | [Schedule name].[Num].autosave.dpl2 | [Schedule name].autosave.[date].dpl2 |
| Critical | [Schedule name].autosave-error.[date].dpl2 | |

**[Num]** shows the database number, to differentiate different bases sharing the same schedule name.

**[date]** indicates that the file is time-stamped in the YYYY.MM.DD-hh.mm.ss format.

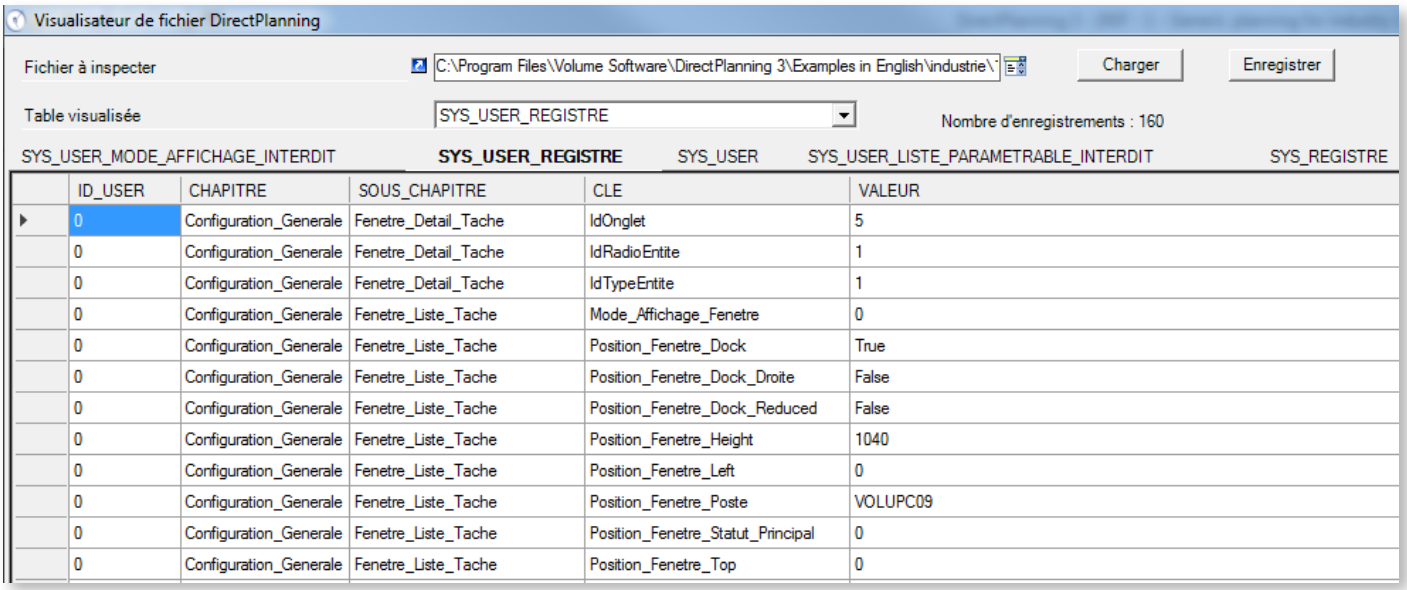
## Opening DPL2 files

A dedicated tool can be used to display, and eventually modify, the contents of DPL2 files. This tool is located in the Direct Planning install directory and is named **DPL2_File_Viewer.exe** It is reserved for the administrator. This tool should be used with extreme caution when modifying DPL2 files.

### Our advice

It is essential to backup the DPL2 file before making any change.
A DPL2 file may be modified upon agreement with Volume Software maintenance staff.

Start the DPL2_File_Viewer.exe program and open the DPL2 file by clicking on , and **Charger** (Load):




| ID_USER | CHAPITRE | SOUS_CHAPITRE | CLE | VALEUR |
|---|---|---|---|---|
| 0 | Configuration_Generale | Fenetre_Detail_Tache | IdOnglet | 5 |
| 0 | Configuration_Generale | Fenetre_Detail_Tache | IdRadioEntite | 1 |
| 0 | Configuration_Generale | Fenetre_Detail_Tache | IdTypeEntite | 1 |
| 0 | Configuration_Generale | Fenetre_Liste_Tache | Mode_Affichage_Fenetre | 0 |
| 0 | Configuration_Generale | Fenetre_Liste_Tache | Position_Fenetre_Dock | True |
| 0 | Configuration_Generale | Fenetre_Liste_Tache | Position_Fenetre_Dock_Droite | False |
| 0 | Configuration_Generale | Fenetre_Liste_Tache | Position_Fenetre_Dock_Reduced | False |
| 0 | Configuration_Generale | Fenetre_Liste_Tache | Position_Fenetre_Height | 1040 |
| 0 | Configuration_Generale | Fenetre_Liste_Tache | Position_Fenetre_Left | 0 |
| 0 | Configuration_Generale | Fenetre_Liste_Tache | Position_Fenetre_Poste | VOLUPC09 |
| 0 | Configuration_Generale | Fenetre_Liste_Tache | Position_Fenetre_Statut_Principal | 0 |
| 0 | Configuration_Generale | Fenetre_Liste_Tache | Position_Fenetre_Top | 0 |

2 methods are available to view the tables in your .DPL2 file: by selecting a table in the dropdown list **Table visualisée** (Table displayed) or by clicking on the tables displayed above the columns (SYS_REGISTRE, LISTE_PARAMETRABLE, etc.).

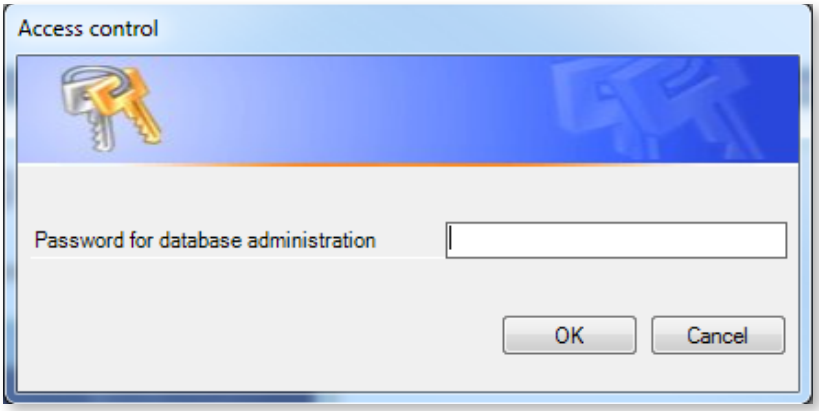
The table and column denominations are internal names used in the database.

Clicking on a column header column sorts the display. To change a piece of data, click a first time in the concerned cell. Then click a second time to switch to printing mode.

When you are done with your modifications, click on the **Enregistrer** (Save) button.

# 7.2. Administering databases

Use the **File** > **Administration** menu to administer Direct Planning databases.

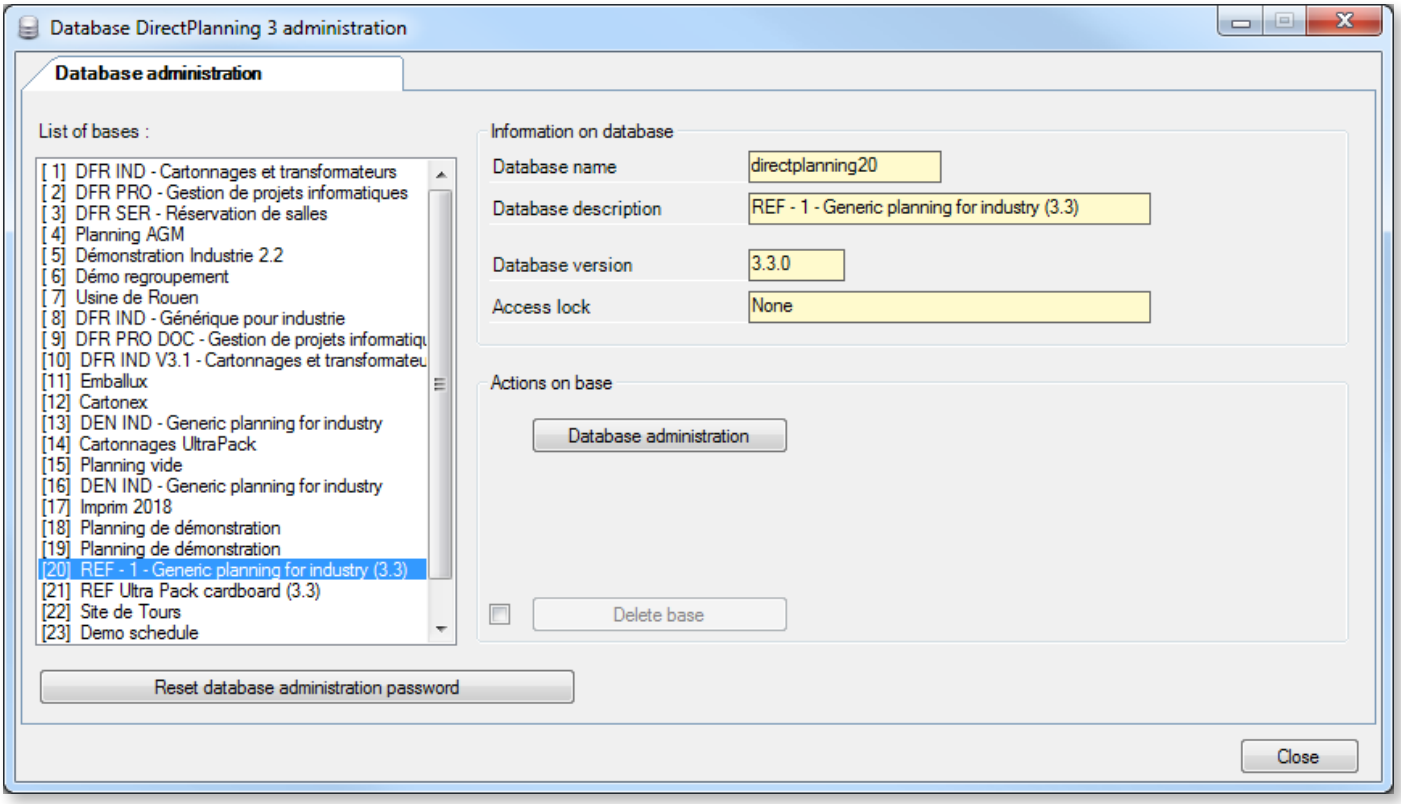



▲ The first time you access the administration module, you must create a password which will be requested on each access.

You can change it later.

> **Warning**
> This password is separate from the user password of the administrator.

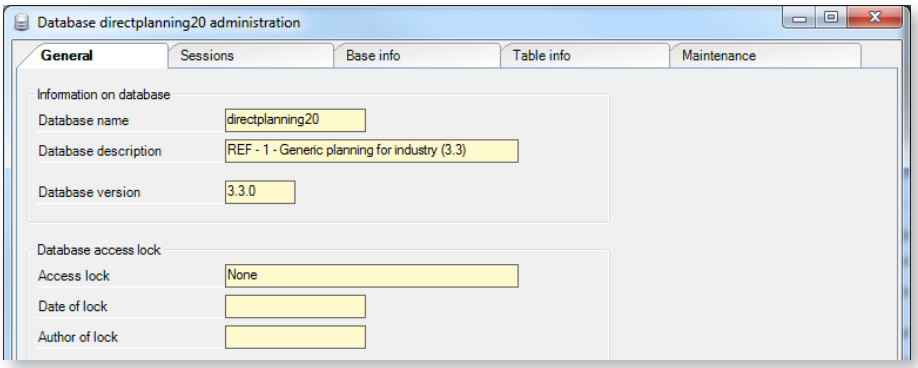
After entering your password, the list of bases displays:




To delete a base, select the base to delete in the list on the left and click on **Delete base** after checking

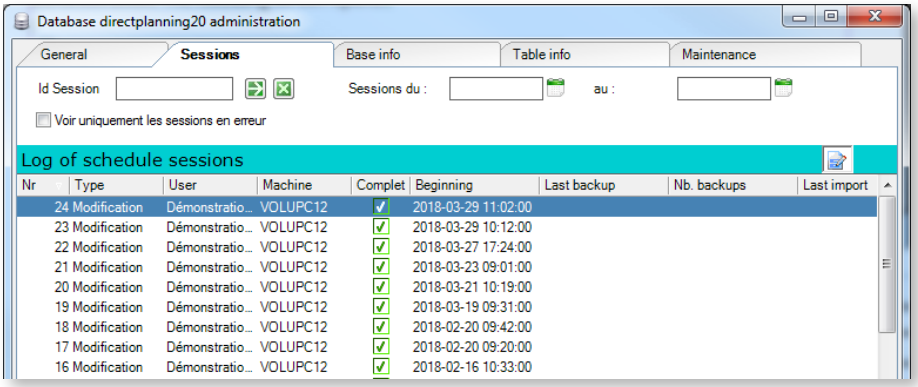
the corresponding box.

To access the actual administration, choose the database to administer and click on **Database administration**. The following screen opens:

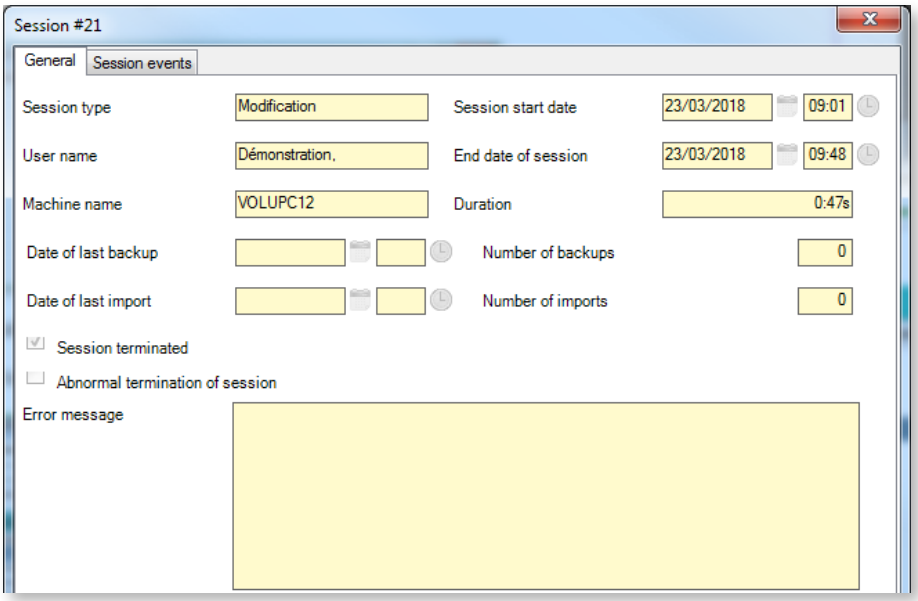



The **General** tab provides an overview of the base.

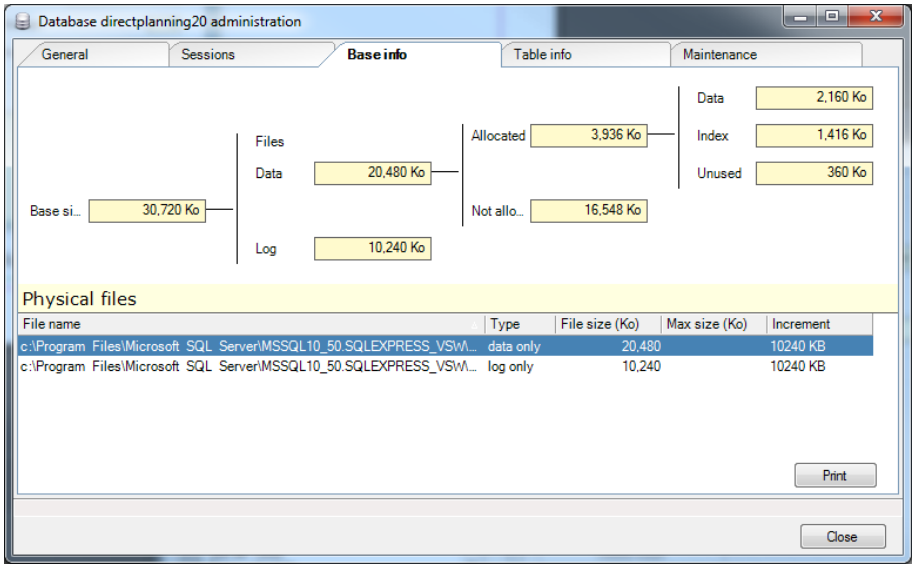
The **Sessions** tab display the history of sessions for the schedule:



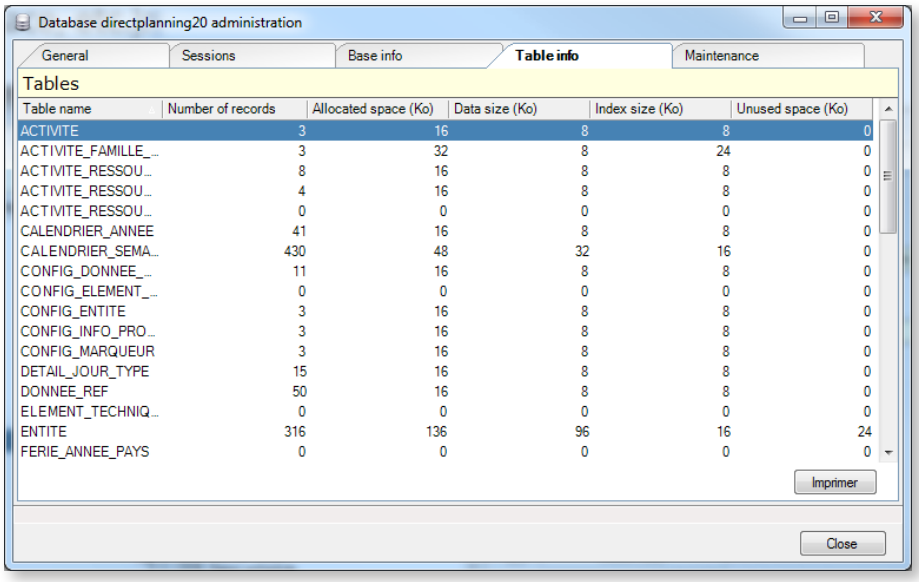

Double-click on a session to display its details:



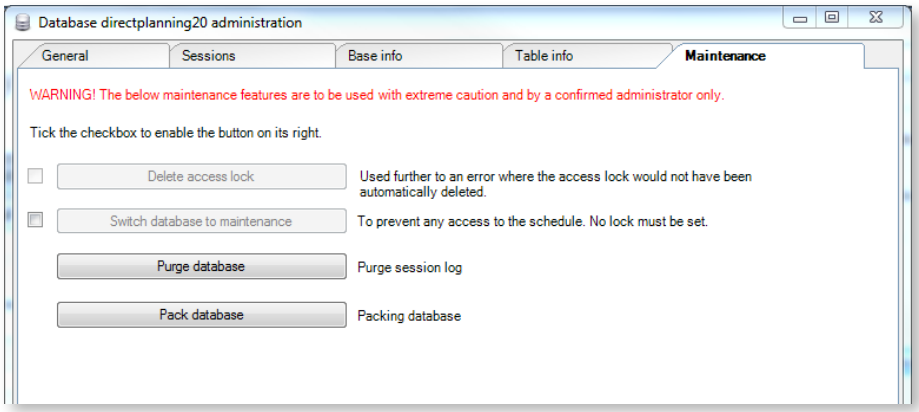

The **Base info** tab offers detailed information about your database (files, data types, sizes, etc.):




The **Table info** tab provides information about the tables included in your base (table names, number of records, allocated space, etc.):




Finally, use the **Maintenance** tab allow to perform various operations on the database:




Note regarding the **Delete access lock** option: a lock prevents 2 computers from modifying simultaneously the same schedule. Normally, this lock is released when closing the schedule.

When Direct Planning is unexpectedly closed, this lock is not released and prevents any modification of the schedule. To solve this problem, check the corresponding box and click on **Delete access lock**.

**Warning**
Do not try to delete this lock if other people are working on this base, in which case this lock is completely justified.

# 7.3. Licenses

Since version 3, Direct Planning relies on a named license manager, which ensures more freedom in the distribution of licenses between the different user stations.
This named license manager is called **Volume Licence Administration (VLA)**.

## 30 days trial version

Upon first installation on your station, Direct Planning runs in trial version valid for 30 days.
The trial version is identical to the full offer, without operational limitations.
When the trial period expires, or before if you wish, you can purchase Direct Planning. To do this, please contact Volume Software by calling (+00.33) 02.47.66.47.20 or email us at info@directplanning.com.
Contacting Volume Software also gives you the opportunity the extend the trial period.

## Registering the Direct Planning license

After the first start, Direct Planning is in trial version, valid for 30 days from the installation date.
This screen acts as a reminder each time you start Direct Planning and the software is not registered.
You can also display this screen by selecting **About** in the "**?** " menu.

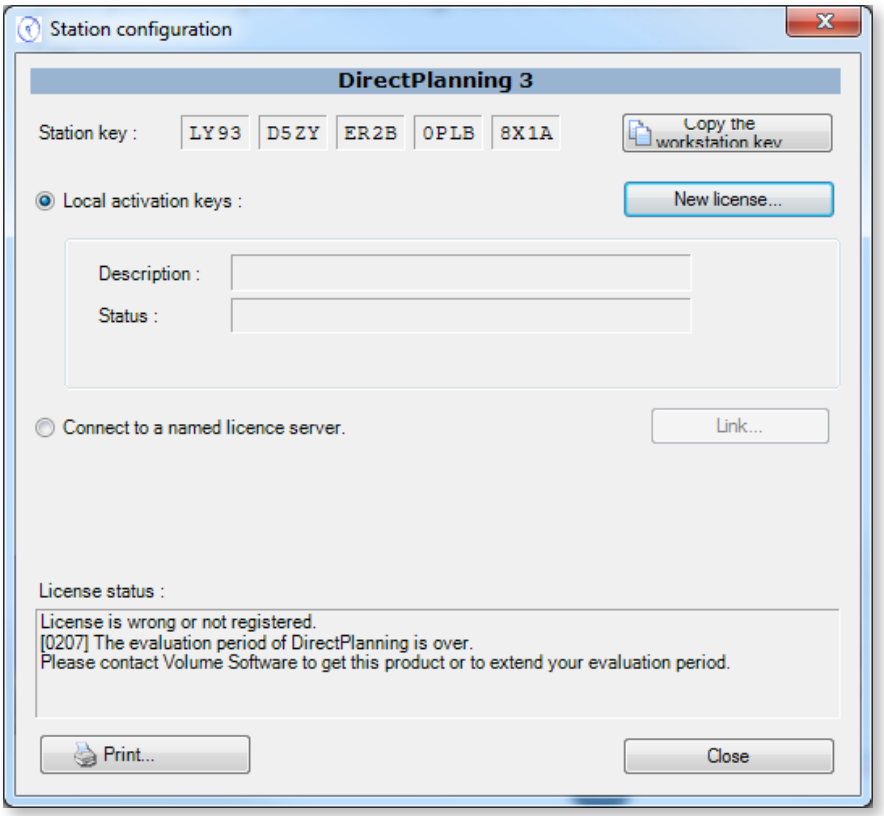
◄ When the 30 day trial expires, running your software requires a license.

Click on **License entry** or **Request a license by email** to activate Direct Planning.

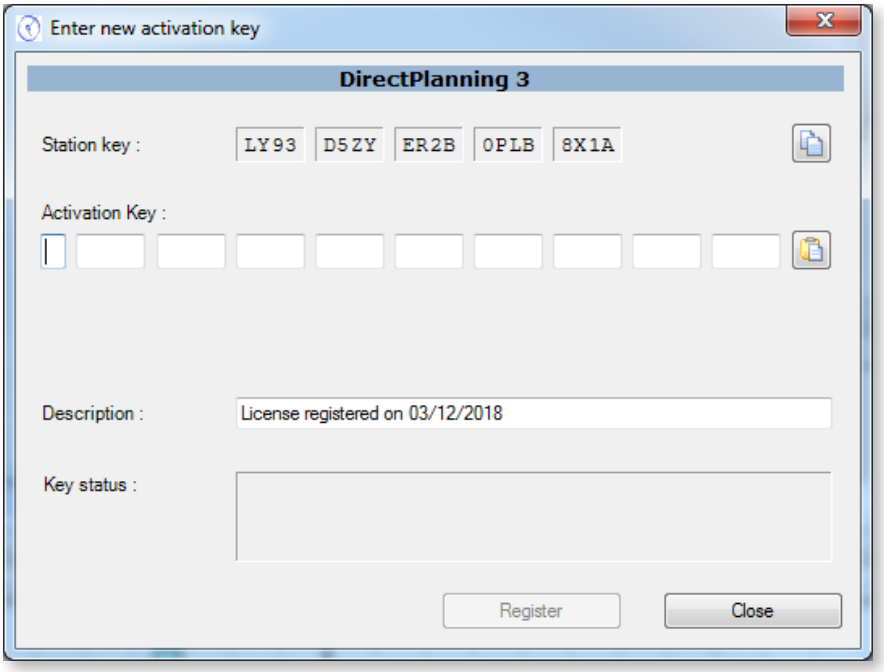
Direct Planning can be activated by entering a local activation key or by connecting to license server (see next pages).

Click on **Request a licence by email** to send us an email containing the information required to grant you a license.
Otherwise, click on **License entry** to open the following window, containing your station key:

## Entering an activation key



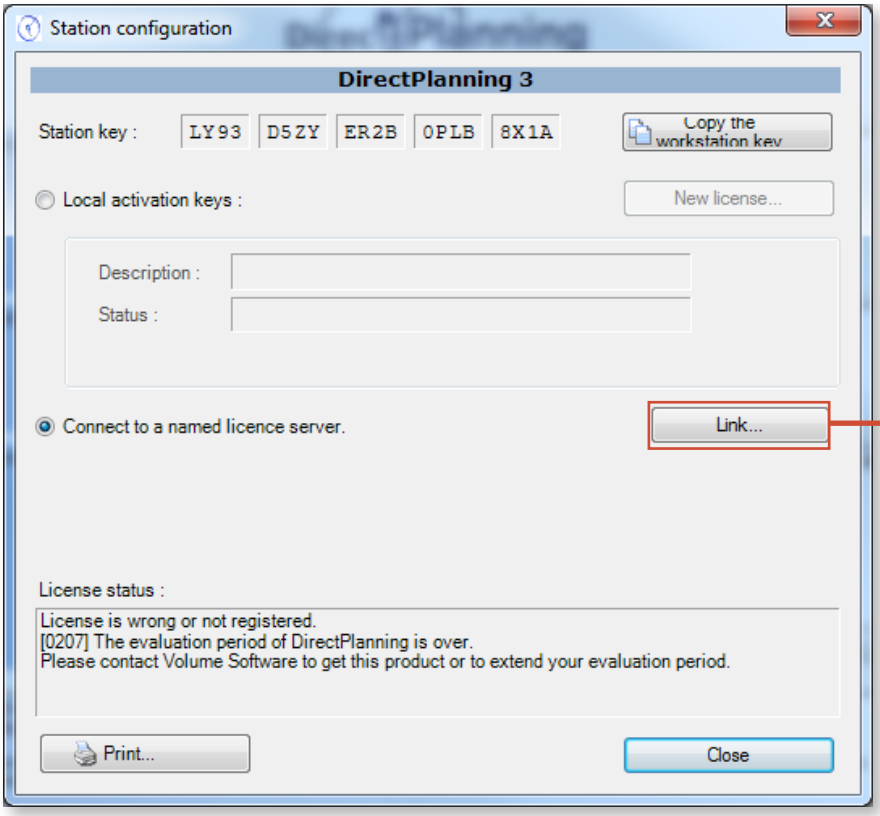

Write down or copy your station key, and transmit it to Volume Software to obtain an activation key. When you receive your activation key, click on **New license...** to enter it manually or paste it:

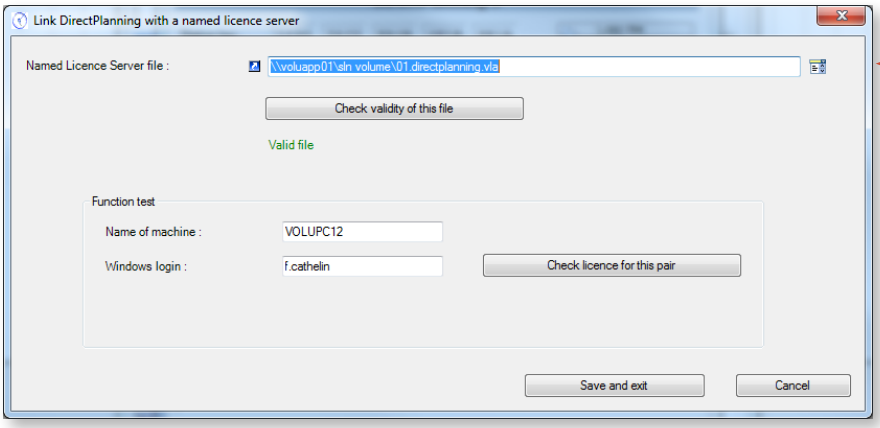


## Connecting to a license server (in the context of a Server license)

Volume Licence Administration (VLA) must first be installed and configured (please refer to the documentation of this product).

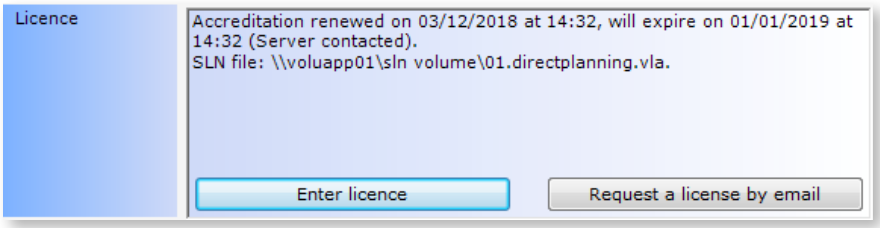
Click on **Connect to the named license server**:




◄ Click on to search for the Named licence server file. Two buttons can also be used to check the validity of the selected file as well as the license for the Machine/Login pair.

Save and Quit: you are now registered.
Once registered, another click selecting **About** in the "**?**" menu shows that your accreditation is renewed for a period of one month:



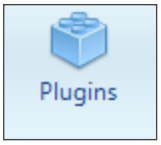
This means that you can stay **30 days** without connecting to the server. Beyond this period, you can still launch Direct Planning **5 times**. Each launch is accompanied by a warning message with a countdown. When the countdown is over, you must connect to the server to regain your accreditation.

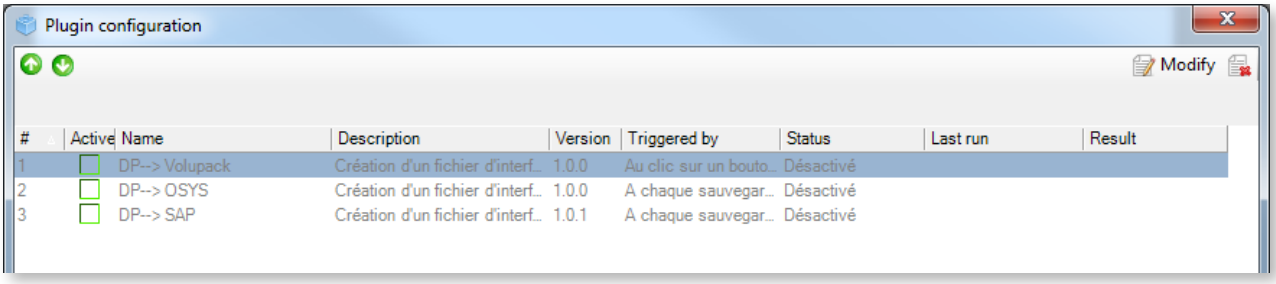
# 7.4. Plugins

Direct Planning includes a plugin manager. Plugins are specific programs which can be called by Direct Planning via various triggers such as each backup, each loading, every x minutes, etc.

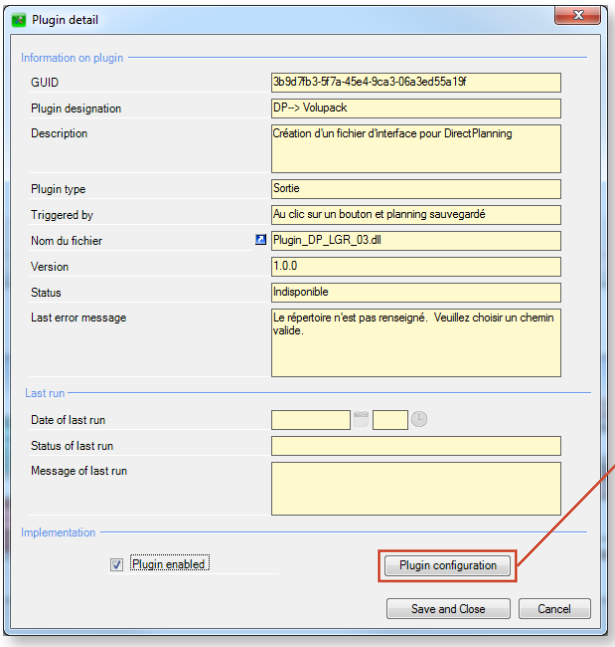
They are for instance used to generate exchange files towards your ERP, in the native format expected by this ERP.

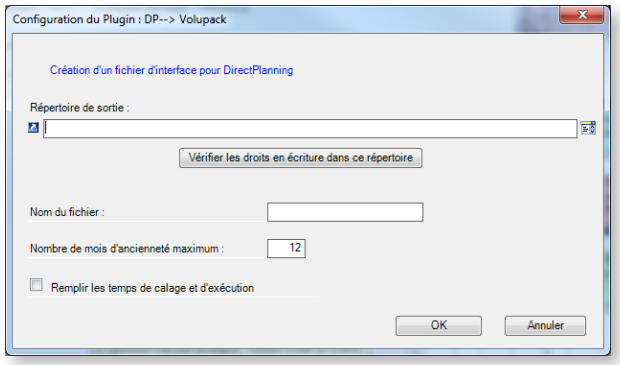
The list of plugins is available by clicking on **Configuration** > **Plugins** in the ribbon:




Double-click on a plugin (or click on **Modify**) to access its detailed information:




▲ This configuration window is specific to the selected plugin.

While writing plugins is currently reserved to the Direct Planning team, third party developers may also be able to contribute to them in the future. Our development team will be happy to assist you with your project.

# Annex A: Keyboard shortcuts

## Common quick actions

| | |
|---|---|
| F1 | Call to documentation |
| F5 | Refresh display |
| F3 | Go down the time scale |
| F4 | Go up the time scale |
| F11 | Hide/Show the ribbon (full screen) |
| F12 | About window |
| Alt + 1 / 2 | Time scale 1, 2, etc. |

## Common quick actions with Ctrl

| | |
|---|---|
| Ctrl + A | Select all jobs |
| Ctrl + C | Copy |
| Ctrl + V | Paste |
| Ctrl + S | Save |
| Ctrl + F | Search |
| Ctrl + G | Current route |
| Ctrl + L | Locator |
| Ctrl + P | Schedule via a list |
| Ctrl + Z | Cancel |
| Ctrl + Y | Redo |

| | |
|---|---|
| Ctrl + 1 | Open the list for entity 1 to 10 (0 for the tenth) |
| Ctrl + E | Selection mode |
| Ctrl + I | Link creation mode |
| Ctrl + M | Enable/Disable highlighting |
| Ctrl + Mouse wheel ↑ | Zoom in |
| Ctrl + Mouse wheel ↓ | Zoom out |
| Ctrl + F10 | Trace mode |

## Job on the same criterion, navigation with CTRL (highlighting)

| | |
|---|---|
| Ctrl + ↖ | First job |
| Ctrl + ← | Previous job |
| Ctrl + → | Next job |
| Ctrl + End | Last job |

## Horizontal scroll in the schedule

| | |
|---|---|
| ← or → | Time scroll from a quarter of a screen |
| Alt + Mouse wheel ↑ | Time scroll to the future |
| Alt + Mouse wheel ↓ | Time scroll to the past |
| Alt + ← or → | Time scroll from a whole screen |
| ↖ | Go to start date of planning assistance |
| End | Go to end date of planning assistance |
| Alt + ↖ | Go to first job of the machine (if a job is selected) |

| | |
|---|---|
| Alt + End | Go to last job |
| ↑ or ↓ | Go to current date |
| Alt + ↑ or ↓ | Go to selected job |

## Vertical scroll in the schedule

| | |
|---|---|
| Mouse wheel ↑ or ↓ | Vertical scroll in the schedule |
| Page Up | Move up in schedule |
| Page Down | Move down in schedule |

## Quick access to tabs

| | |
|---|---|
| Alt + F | Show/Hide File menu |
| Alt + A | Home menu |
| Alt + I | Display menu |
| Alt + E | Edit menu |
| Alt + P | Planning assistance menu |
| Alt + S | Status menu |
| Alt + D | Data menu |
| Alt + C | Configuration menu |

# Annex B: Glossary

| Term | Definition |
|---|---|
| **Alerts** | Alerts are messages used to draw attention on specific activities, for example if a job ends after the latest end date (retained by Direct Planning). |
| **Calculation of running times** | Running times can be forced or calculated depending on the quantity to produce and the work rate. The latter can be indicated on the machine but it also possible to go beyond, for instance by configuring complex formulas which take your business constraints into account. |
| **Calculation of setting times** | Setting times can be forced or calculated according to your business rules. For instance, DP can consider the time needed to change tools and reduce automatically the setting time of the current job uses the same tools as the previous job. |
| **Calendars** | Calendars allow the definition of machine-specific periods of activity/inactivity, regular or exceptional. |
| **Compatible machines** | Based on your business rules and data, Direct Planning can tell whether or not a job can be moved to another machine. Moving a job to an incompatible machine displays a warning. |
| **Configurable areas** | Certain standard data in Direct Planning (machines, jobs, multi-status flags, entities and Process Information) can be complemented by configurable areas which are customisable according to your needs. |
| **Configurable lists** | Configurable lists are used to create custom lists tailored to user-specific needs. Each list can be exported to Excel with a single click. |
| **Constraints** | Jobs can be subject to different constraints:<br>• Strong constraints: earliest start date and links between jobs attached to the same route.<br>• Objective constraints: latest end date. |
| **Declaration of production** | The declaration of production updates the observed quantities and durations. It can be input manually or imported from an ERP/MES. |
| **Display modes** | Display modes are used to customise how jobs are displayed and coloured in the schedule. They also define time scales and display restrictions. |
| **Earliest start/Latest end date** | When a job/route is selected, its time boundaries are displayed as vertical lines (solid or dotted):<br>• Earliest start date: green dotted line (job), green line (route)<br>• Latest end date: orange dotted line (job), orange line (route) |

| Term | Definition |
|---|---|
| **Entities** | Entities are data lists which evolve with your activity (Sales representatives, Customers, Orders,...).<br>Entities must first be configured according to your needs, providing a list for each piece of data. |
| **ERP export** | Direct Planning can return planning data to another application able to receive data in the CSV format. |
| **ERP import** | An application managing jobs can send information to your schedule via Direct Planning's import function. |
| **Flags** | Flags are coloured and sometimes hatched bullets located above and/or on the right of jobs.<br><br>They serve the same purpose as paper clips and other stickers put on traditional wall schedules. |
| **Jobs** | A job represents an occupation or activity at a given time, for a given resource. |
| **Jobs to schedule** | As the name implies, jobs to schedule are jobs that you want to see on your schedule without setting them to a specific date. |
| **Links** | The succession of jobs within a route is materialised by links (coloured arrows). |
| **Locked jobs** | Identified by a lock icon, locked jobs cannot be modified or moved. |
| **Machines** | Machines are the foundation of the Industry planning. Please note that in Project and Service modes, machines are replaced by resources (e.g. rooms, employees, etc.). |
| **Operations** | Your machines perform operations.<br><br>Examples: this machine makes die-cutting, that machine makes bonding, etc. |
| **Planning assistance** | Planning assistance encompasses a set of powerful tools (adjustment of jobs to the left or right, workload histograms) to optimise the schedule. |
| **Plugins** | Plugins are specific programs that Direct Planning can call with triggers. |
| **Process information** | Process Information is technical data whose display is limited to certain machines. |
| **Production route** | A set of jobs which must be performed in a specific chronological order is called a route. A route implies the respect of time constraints. |
| **Progress status** | Direct Planning allows to view the progress status of unfinished jobs, materialised by a blue bar, at a glance. |

| Term | Definition |
|---|---|
| **Reference data** | Reference data are data lists represented by a code, a designation and a colour.<br>Examples: lists of sales representatives, product families, cutting dies, colours, etc. |
| **Sections** | Sections are groups of machines. |
| **Technical data** | Technical data are essential components for calculating setting times and work rate. They can be quantitative (e.g. dimensions) or qualitative (e.g. material types). |
| **Time scale** | The time scale is the time axis of the schedule. |
| **Working units** | Working units express the unit of measure for your machines.<br><br>Examples: panels, sheets, kilograms, copies, linear feet. |
| **Workload histogram** | The workload histogram is used to analyse workload and capacity by machine and section. |