

OEE Studio

MTBF

This Tool-Tip will guide you through the process of creating the MTBF report in OEE Studio.

This guide assumes that you have a good working knowledge of how to use Pivot Grids and Custom Fields in OEE Studio.

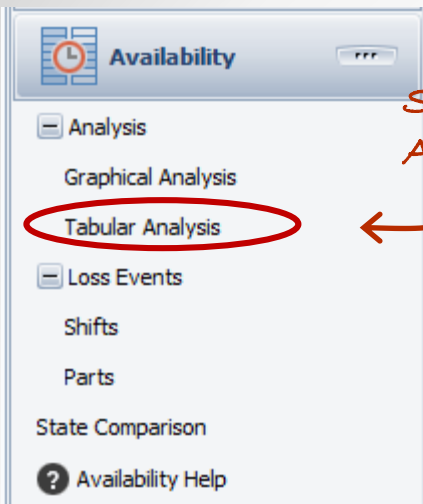
<https://www.youtube.com/watch?v=SK6LxaVkj7M>

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Tool-Tip - MTBF

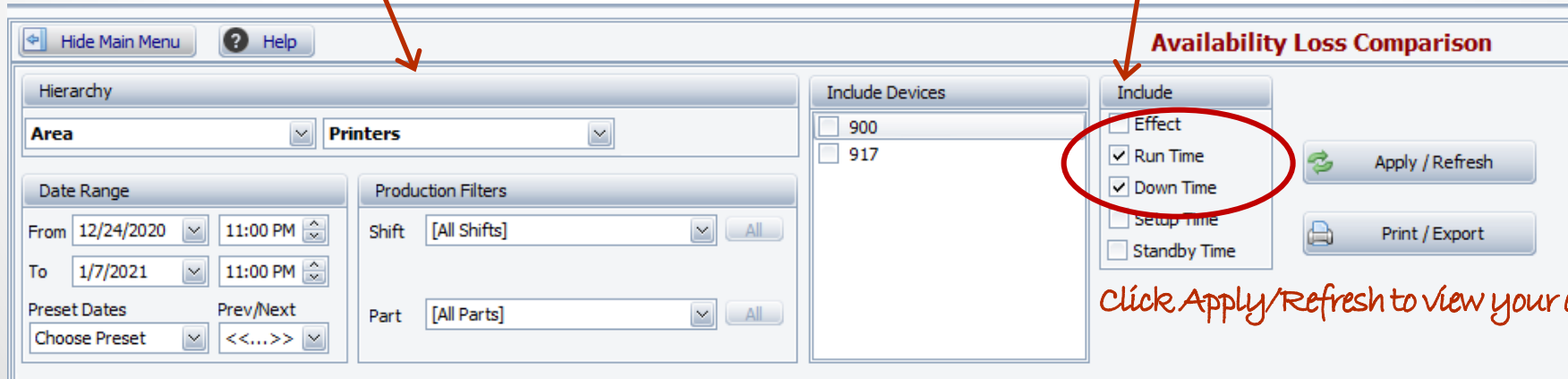
- The MTBF uses the **Availability – Tabular Analysis** sections of OEE Studio. You could also use the **Loss Events** by either **Shift of Parts**.
 - "Mean Time Between Failures" is literally the average time elapsed from one failure to the next. Usually people think of it as the average time that something works until it fails and needs to be repaired (again). **MTBF is the average amount of time a machine or system is up and running between failures.**
 - To calculate **MTBF**, divide the total number of operational hours in a period by the number of failures that occurred in that period. MTBF is usually measured in hours.
 - **MTBF = # of operational hours ÷ # of failures**
 - For example, an asset may have been operational for 1,000 hours in a year. Over the course of that year, that asset broke down eight times. Therefore, the MTBF for that piece of equipment is 125 hours.
 - It is important to be able to specify the **TYPE** of breakdown to get a better picture of MTBF.
 - It is a good idea to code your downtime reasons in the Vorne XLv1 by the type of breakdown – i.e. BR = breakdown, MS = Minor Stop, QA = Quality and so on. Then in the BR category, you can add another type such as BR MECH or BR ELEC and so on. Or you can add the asset that caused the failure – such as BR Capper, BR Labels, etc. Check out our recommendations [here](#).

Creating the MTBF Report



Select Tabular Analysis under Availability - Analysis

Select your filters



Select Run Time and Down Time

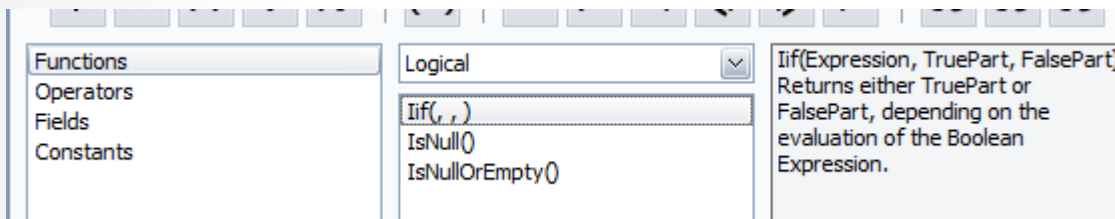
Click Apply/Refresh to view your data.

Creating the Report

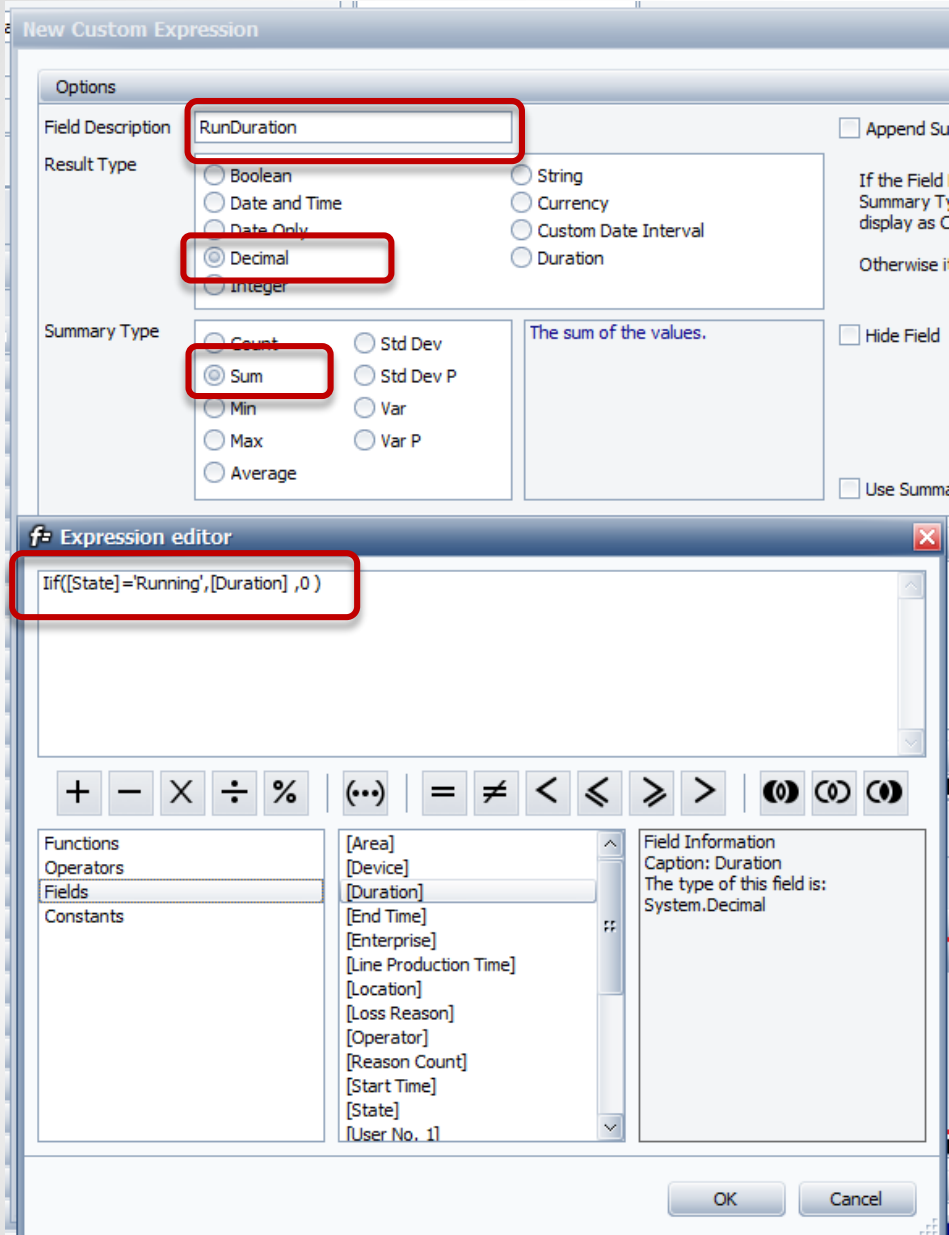
Grand Total	Duration (Sum)	Reason Count	RunDuration	DownCount	MTBF
Grand Total	00h 00m 00s	0	0.00	0.00	00h 00m 00s

We are going to create 3 Custom Fields.

1. Create the RunDuration Field.
2. Create the DownCount Field
3. Create the MTBF field.



We will be creating Logical IF statements (IIF).



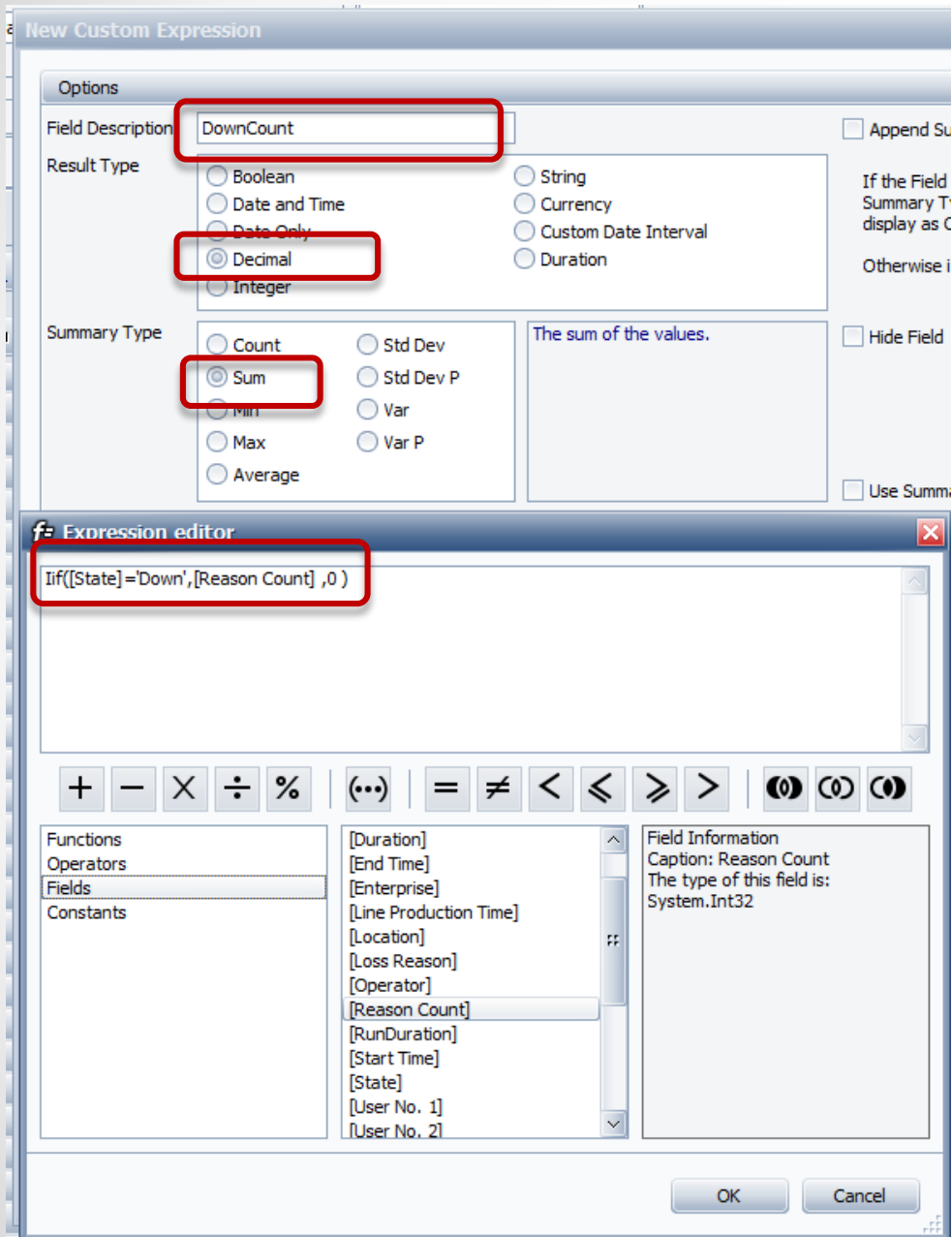
1. Create the RunDuration Field

We need to get the total hours that were **Running**. The custom field needs to be in seconds and not formatted.

In the expression Editor, we will create a logical IF statement (IIF).

You can copy this if you want and paste it into the expression editor.

`Iif([State]='Running',[Duration] ,0)`



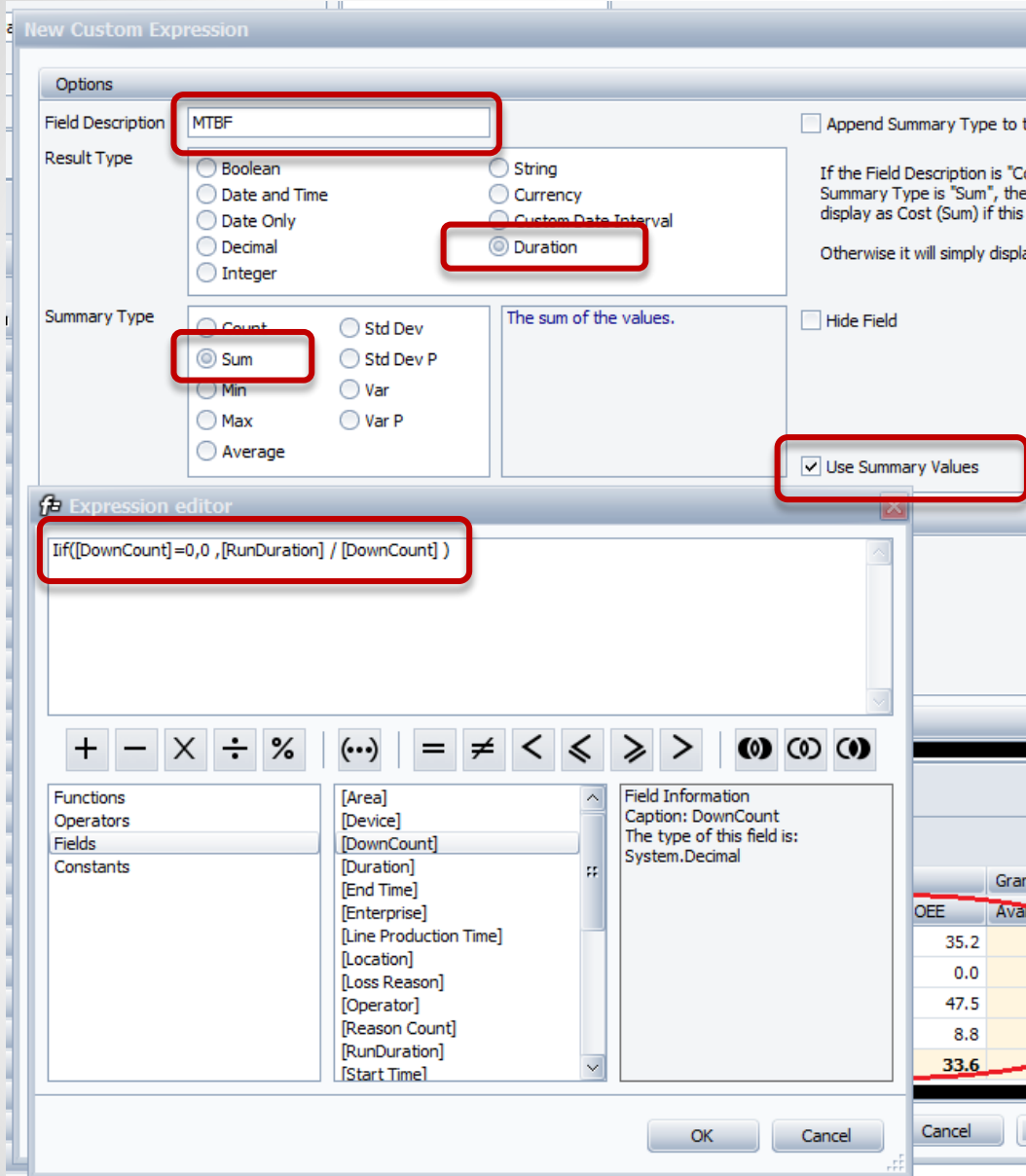
2. Create the DownCount Field

Next we need to get the number of occurrences of just the **DOWN** events.

In the expression Editor, we will create a logical IF statement (IIF).

You can copy this if you want and paste it into the expression editor.

If([State]='Down',[Reason Count] ,0)



3. Create the MTBF Field

Now we are going to create the **MTBF** calculation using the previous fields.

You need to select **Use Summary Values** as this calculation is based on the displayed custom fields.

In the expression Editor, we will create a logical IF statement (IIF).

You can copy this if you want and paste it into the expression editor.

`Iif([DownCount]=0,0,[RunDuration] / [DownCount])`

Take a look at your report.

Your report should look like this. Place the **State** between the **Device** and **Loss Reason** so that you can see the values.

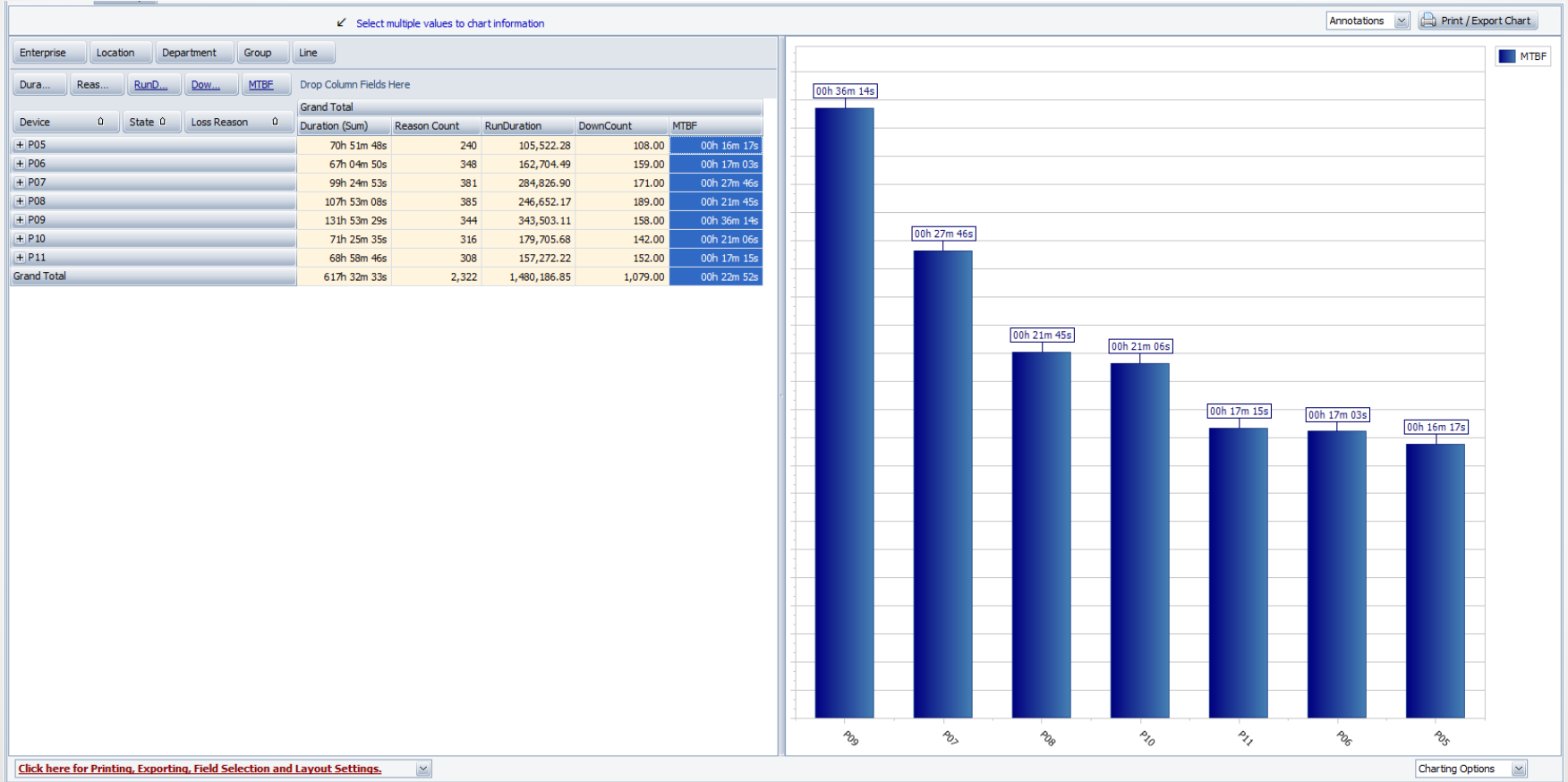
Right-Mouse Click and Collapse the report at the Device level and Chart the MTBF results.

The screenshot shows a software report interface. At the top, there are navigation buttons for Enterprise, Location, Department, Group, and Line. Below these are buttons for Dura..., Reas..., RunD..., Dow..., and MTBF. A section titled 'Drop Column Fields Here' contains a table with the following data:

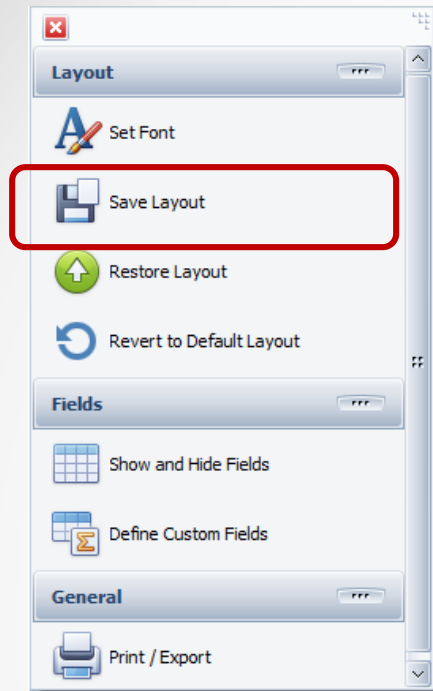
Device	State	Loss Reason	Duration (Sum)	Reason Count	RunDuration	DownCount	MTBF
P05	Down	Blade Change	01h 05m 59s	4	0.00	4.00	00h 00m 00s
		Clean Plate	03h 50m 10s	34	0.00	34.00	00h 00m 00s
		Maintenance Fix	20h 01m 36s	13	0.00	13.00	00h 00m 00s
		None	00h 00m 05s	21	0.00	21.00	00h 00m 00s
		Other	00h 30m 26s	8	0.00	8.00	00h 00m 00s
		Run Color Match	00h 58m 33s	4	0.00	4.00	00h 00m 00s
		Shift Sanitation	00h 18m 15s	2	0.00	2.00	00h 00m 00s
		Splice Manual	01h 35m 46s	17	0.00	17.00	00h 00m 00s
		Staff Shortage	12h 00m 34s	4	0.00	4.00	00h 00m 00s
		Web Break	01h 11m 37s	1	0.00	1.00	00h 00m 00s
Down Total			41h 33m 05s	108	0.00	108.00	00h 00m 00s
	Running	Running	29h 18m 42s	132	105,522.28	0.00	00h 00m 00s
P05 Total			70h 51m 48s	240	105,522.28	108.00	00h 16m 17s

A context menu is open over the table, showing options: Collapse, Expand All, Collapse All (highlighted), and Filter by Top Values. The 'Collapse All' option is highlighted in orange.

MTBF Chart



Saving the Report as You Work on it.



Select the “**Click here for Printing. . .**” options.

Click on the **Save Layout** button.

Enter a name for the report.

Select ‘**All Users**’.

Click the **OK** button.

You can call up the report by following the same process and select the **Restore Layout** button.

You can also save it as a **Favorite**.

