

## User Manual

SAM 5

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## LIST OF DEVELOPMENTS

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		Approved by			

## DETAIL OF EVOLUTIONS

<b>Rev.</b>	<b>Detail of modifications</b>
A	Creation of the document
B	Compatibility with windows Seven Changes of the zero reference and of the search functions
C	A development in the printing function Addition of Dutch
D	Additional informations on the cursor in the graphical view Uniform print-outs of all the views
E	New file explorer view Fast filter selection via right click Additional descriptions for existing functions
F	Compatibility with Windows 10 and Chinese language added. Several folders can now be added in the journey file explorer view at top level. New column added in the tabular and list views for the accumulated distance.
G	Addition of the multimedia view to play audio files
H	Corrections to the format used for exported files and various updates

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## DOCUMENT MANAGEMENT

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## USER MANUAL

### 1. Purpose of the document

This document describes the functions of the SAM 5 software.

### 2. Scope of application

This manual applies to the SAM 5 software and journey files recorded on the Faiveley event recorders.

#### 2.1 Operating systems supported

SAM 5 only supports the following Operating Systems:

- Windows 10
- Windows Seven 32 and 64 bits
- Windows XP Pro

No guarantee is made that this software will run on Operating Systems other than the ones listed above.

#### 2.2 Hardware configuration required

The minimum configuration of the computer used to run SAM 5 is:

- Pentium 4 Processor at 1.4 Ghz or equivalent, 1GB RAM, 15' monitor.

### 3. BRIEF DESCRIPTION OF THE PRODUCT

The SAM software is a multilingual software application displayed in English when first opened. The language can be changed using the "File – Preferences" menu.

After opening a journey file, the data recorded can be viewed using the "List", "Graphic", "Tabular" and "Binary" views.

The "List" view displays events in the chronological order in which they were recorded by the appliance (one event per row with the name of the event followed by the context variables).

The "Graphic" view is used to draw curves for analog variables such as braking pressure or speed.

The "Tabular" view is used to view how one or several variables evolve in the form of a data table (one variable per column).

The "Binary" view displays the data recorded in hexadecimal form (raw data format).

In order to limit the display to the useful data, it is possible to create a large number of filters on the events or on the data. In the latter case it is possible to add a condition value to the data.

The "Multimedia" view is a specific view which is used to display a list of audio files which corresponds to a given journey file and to start playing an audio file

The various views proposed can be displayed simultaneously and a synchronization option allows you to identify the position of certain items of data in all of the views.

The user can also add annotations to the recorded data and browse between data.<sup>1</sup>

---

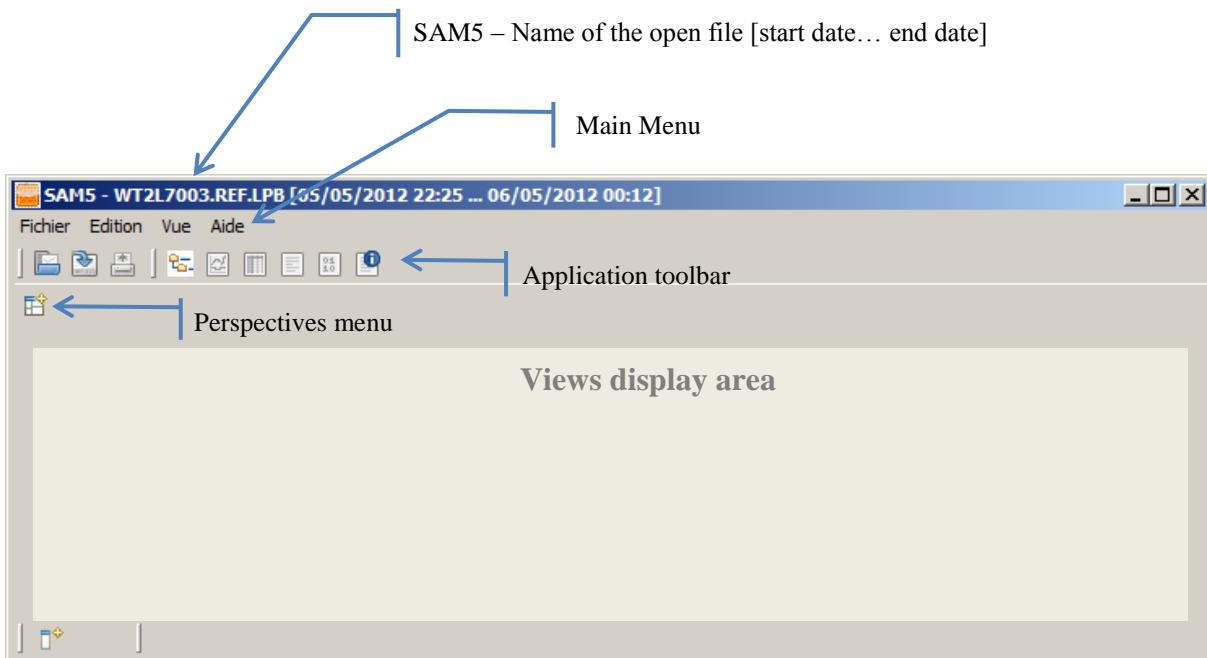
<sup>1</sup> N.B.: this action does not modify the original data

## 4. USING SAM:

### 4.1 Application presentation

#### 4.1.1 Main application window

On opening, the SAM application displays a single window grouping together all of the software's functions and used to view the data of a single journey file at once<sup>2</sup> (SDI – Single Document Interface Windows application).



**Figure 1 : Main SAM screen**

The name of the application SAM5 appears at the top of the screen, followed, depending on the case, by the name of the open file, followed by the start and end dates and times of the journey file between square brackets.

The row directly below is used to access the main menu. The list of functions of this menu is provided in sub-section 4.1.2.

The toolbar is used to quickly run a function or a view without using the main menu. The meaning of each icon is provided in sub-section 4.1.3.

Use of the perspectives is explained in sub-section 4.22.

On opening the application, the display area shows the recorder file explorer view (see sub-section 4.2).

<sup>2</sup> It is possible, however, to run several SAM sessions on the same workstation.

## 4.1.2 List of main menu functions

All functions of the SAM main menu are listed in the table below with reference to the subsection herein explaining how to use each function.

File	Edition	View	Help
Open ➔ see § 4.3	Time corrections ➔ see § 4.14.1	Binary view ➔ cf. § 4.8	About SAM5
Close ➔ see § 4.3	Distance corrections ➔ see § 4.14.2	List view ➔ cf. § 4.7	Help
Import a profile ➔ see § 4.20.2	Virtual boolean variables ➔ see § 4.11	Tabular view ➔ cf. § 4.6	
Save the annotations ➔ see § 4.9	Search in files ➔ see § 4.15.2	Graphic view ➔ cf. § 4.5	
Export in a file ➔ see § 4.15.5.1		Multimedia view ➔ cf. § 4.16	
Multiple exports ➔ see § 4.15.5.3		Recorder file explorer ➔ cf. § 4.2	
Print ➔ see § 4.17		Annotations ➔ see § 4.9	
Preferences ➔ see § 4.23		Journey information ➔ see § 4.4	
Exit		Fault report ➔ see § 4.21	

The "Help → About SAM5" menu is used to view the SAM version that is running.

The "Help → Help" menu opens this user manual in the default PDF editor selected in Windows.

The "File → Exit" menu closes the application.

### 4.1.3 Application toolbar

The application toolbar is used to quickly run the following functions also available in the main menu:

- 
-  Open a file
  -  Save the annotations
  -  Print
- 
-  Recorder file explorer
  -  Binary view
  -  List view
  -  Tabular view
  -  Graphic view
  -  Multimedia view
  -  Journey information
- 

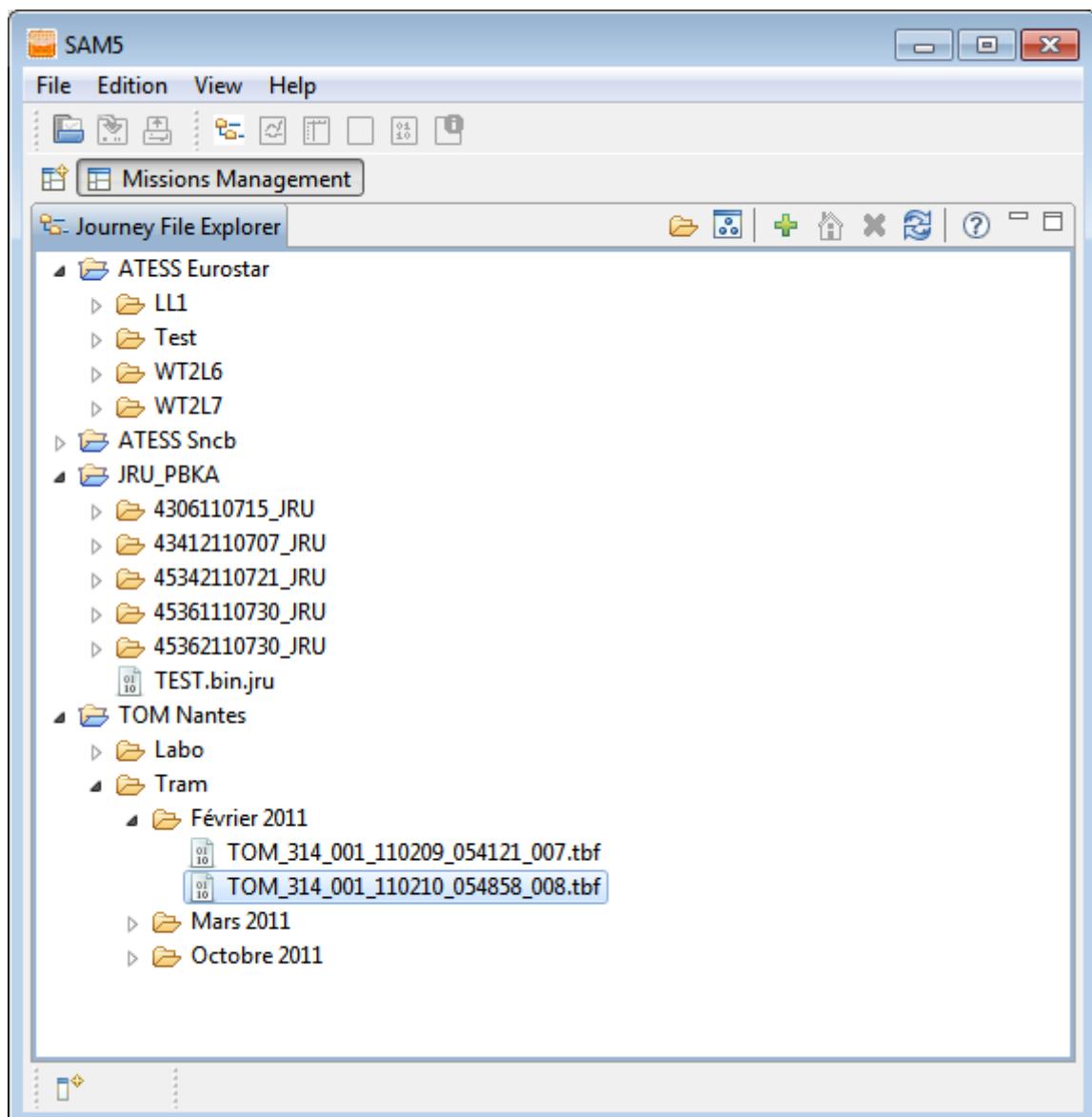
Opening a journey file makes it possible to open Binary, List, Tabular, Graphic and Journey Info views.

Opening an audio file on its own opens the Multimedia view automatically.

Opening a journey file with which one or more audio files are associated enables all the views to be opened

## 4.2 Recorder file explorer view

The explorer window is used to view all journey files and audio files contained in a directory selected by the user. This directory may be located on the PC's hard drive, on a network drive or on a USB stick.



**Figure 2 : Recorder file explorer view**

When first starting the software, the file explorer opens at the user's "Document" folder by default. Use the  icon to select another work folder. SAM filters the contents of the selected folder so that only the sub-directories and files supported by SAM are visible on the user interface. The following file extensions are recognized by the SAM tool: .jru, .bru, .lpb, .ftb, .fkb, .fpb, .lkb, .ltb, .lwb, .tbf, .cbf and .opus. The GZ archives (.gz files) are also visible from the Browser View.

Additional files may be added to the workspace using the  icon.

The  icon allows removing a folder from the workspace.

If journey files are added to a folder by another application, the file explorer view can be refreshed by using the  icon.

All actions associated with the File Explorer view can be accessed either via the icons in the top right of the screen, or via a drop-down menu after right clicking on the selection. The following actions are available:

-  Open
-  Explore
-  Add a new folder to the workspace
-  Change folder
-  Remove a folder from the workspace
-  Refresh the view
-  Properties

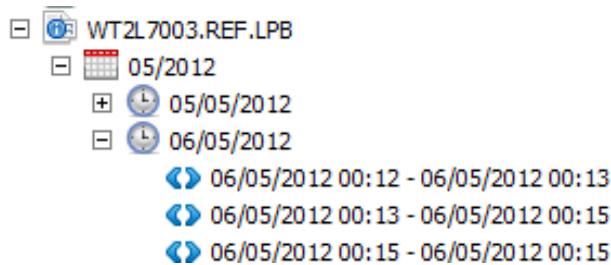
#### 4.2.1 Exploring a journey file

A journey file can be explored in order to create time slices within a journey file and thus enable the file to be partially opened. This function is particularly useful for large journey files (several MB).

After running the Explorer command, the journey data is displayed in the form of groups that may represent either a whole month ( icon), one day ( icon) or a segment of time<sup>3</sup> ( icon).

---

<sup>3</sup> A time segment is the result of multiple appliance start-ups during the day or of a clock update.



**Figure 3 : View of a journey file after exploration**

After using the Open command in sub-section 4.2.2, a journey file can then be partially opened (a whole month, one day of operation or a segment of time). Each group can be opened individually, or the user can open several consecutive groups (for example two consecutive days) via multiple selection (Shift+Click or Ctrl+Click).

The exploration action is performed only once for a journey file. The outcome of this action is stored in memory in the journey file folder.

After exploration, the journey file icon changes shape (from  to ), which enables the files that have not yet been explored to be easily identified.

The Explorer function can also be run on a directory, which results in the successive exploration of all journey files contained in this directory and its sub-directories (N.B.: this action may take some time, depending on the size and number of files to be explored).

Exploring a GZ archive causes the path file contained in the archive to be decompressed onto the disk and it automatically starts browsing this file as described previously.

#### 4.2.2 Open function

This action is only possible for the following elements: Audio files, Journey files, Monthly groupings, Days and Time segments. It is greyed over when a directory has been selected. Opening a GZ file will decompress this file to a temporary directory and automatically open it in SAM if the decompressed file uses a supported format.

In the case of a Journey file, after selecting the Open command, the software automatically switches to the Reception perspective. The Reception perspective groups together all views opened by the user during his/her last session.

In the Reception perspective or in the other perspectives, the File Explorer view can be re-opened using the "View – File Explorer" menu or via the  icon on the toolbar.

### 4.2.3 Properties function

For a journey file, the "Properties" function displays the full drive path and the size of the file selected in a pop-up window.

For a directory, the "Properties" function displays the full drive path of the directory selected in a pop-up window.

For a GZ archive, the "Properties" action uses a pop-up window to display the entire path on the disk and the size of the selected archive as well as the name of the file contained in the archive and the size of this file once decompressed.

### 4.3 Opening a file

In addition to the partial opening mechanism described in 4.2.1 and 4.2.2, a journey file or an audio file can also be opened using the "**File -> Open**" menu in the main menu or from the  icon on the toolbar.

This will open a browser (see **Figure 4**). This window lets you browse the PC's file tree structure and select the file you are looking for.

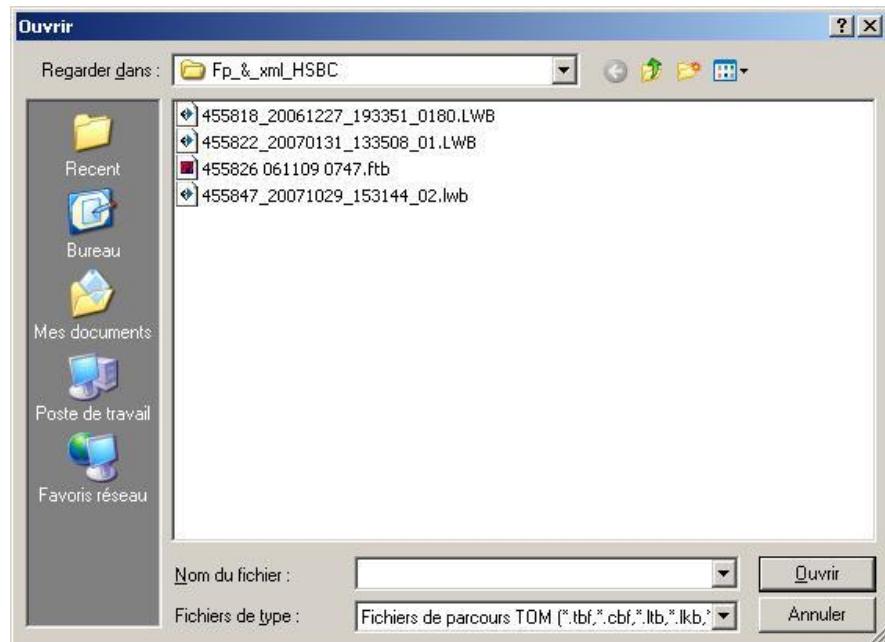


Figure 4

N.B.: It is not possible to open several journey files at the same time, which explains why it is necessary to first close the current journey file in the software. A file can also be forced to close using the "File -> Close" menu from the main menu. The month, day and time segment groups are

not visible and cannot be opened using the "File -> Open" menu. To open these groups, use the Open command in the recorder file Explorer view.

## 4.4 Viewing the main information on the journey

When a journey file is open, you can display the generic information linked to that file with the "*View -> Information on the journey*" command (see **Figure 5**).

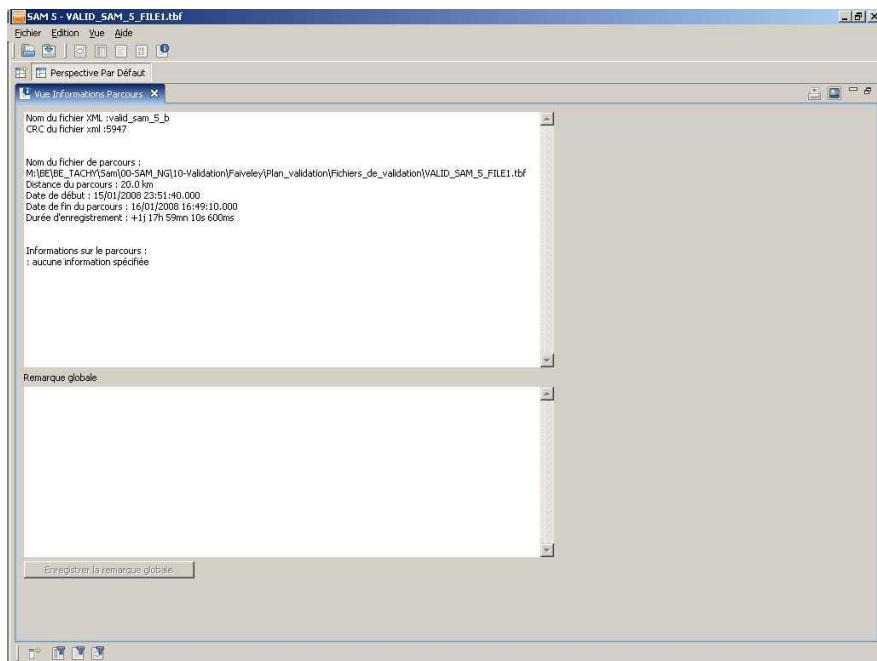


Figure 5

The information displayed in this view comprises:

- "***Start recording time***": The time at the beginning of the journey record file.
- "***End recording time***": The time at the end of the journey record file.
- "***Recording duration***": The time during which the recorder was running over the entire journey (the image of the recording capacity on the cassette).
- "***Covered distance***": The total distance covered by the train over the entire journey.
- "***Other information (if available) such as:***
  - "***Train-Number***": The train number.
  - "***Vehicle-Number***": As shown.
  - "***Driver-Number***": The driver number.

## 4.5 View the journey in the graphic form

You can open a graphic view with the  icon or the "**Views -> Graphic view**" menu command.

The graphic view is shown in **Figure 6**.

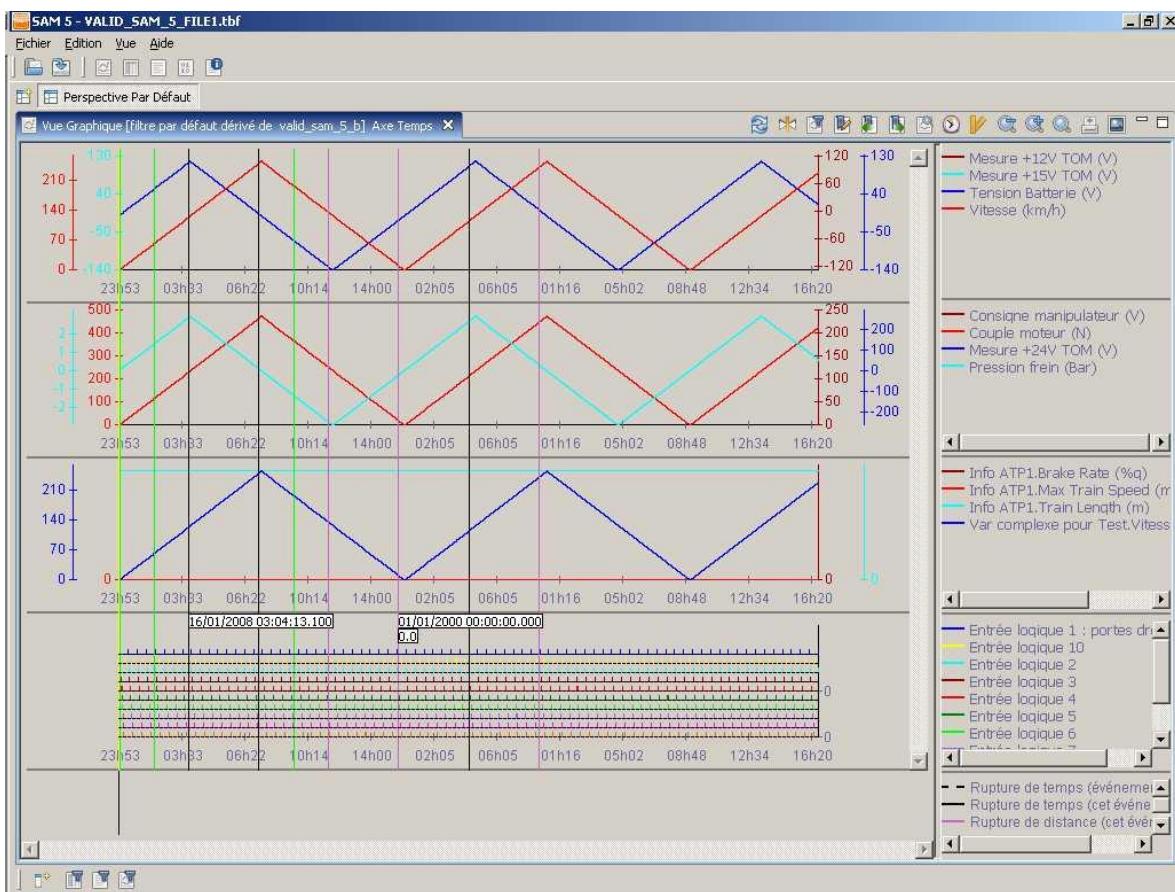


Figure 6

The Boolean variables are all represented on the bottom axis and are offset to make them easier to read.

The maximum number of continuous or discrete non-Boolean variables for an axis system is "**4**".

The sequencing of the graphs and variables can be done using the filters (see 4.12).

By default, SAM creates a basic filter that is not configurable. It contains the speed and the first 10 simple Boolean variables (i.e., one Boolean axis).

There are a certain number of options, accessible via the contextual menu (right click on the mouse), used to optimize the display or navigation in the graphic view. Some of these options are also active for other views.

#### **Axis graduation:**

The graphic view represents variables according to a single reference frame for all the axis systems in the view. The possible reference frames are time and distance. This choice can be made using the contextual menu in the graphic view.

#### **"Stepped graph" mode:**

This mode is intended to display analog variables as they are recorded; the lines are not drawn straight from one point to the next.

By default this mode is enabled.

#### **Viewing the "time breaks":**

It is possible to select the "*Display label for time breaks*" option: the time breaks will be represented in such a way that the time during which the variables do not have a value (recorder stopped) are deleted from the x-axis. This will be indicated by means of a vertical bar with the associated time information. A check box in the contextual menu allows you to choose this option.

#### **Display mode:**

You can choose a "line" or "points" display mode by means of the check box in the contextual "options" menu in the graphic view.

#### **Zoom X:**

You can zoom in on a portion of the graph to carry out a finer analysis. Just slide the mouse horizontally while pressing the left button to select the area where you want the zoom; this area is then blacked out. The zoom area is then displayed on the full screen along with a horizontal scroll bar. You can choose the type of reference frame, distance or time, in this window as shown in Figure 6.

The system memorizes the last Zooms used. To browse through the zoom history, use the contextual menu or the keyboard shortcuts given in this menu.

#### **Zoom Y:**

This option allows you to perform a ZOOM on Y to increase the sensitivity on the Y axis. Proceed in the same way as for Zoom X, moving the mouse vertically.

**Reference point:** (a function which can be used in the other views)

The reference point lets you set a new origin used to calculate the relative time and distance values.

The reference point is displayed by a yellow line which is called "Ref". The value of the relative distance of the "Reference Point" is displayed in the tab where the title of the view is displayed (next to the name of the applied filter). An information bubble containing this same information appears when the mouse pointer passes over the yellow line.

Refer to sub-section 4.15.1 for further information.

**Cursor:**

This option is used to display a vertical line with the X reference located at the place where you click. This allows you to look at the synchronism of the variables on different axes. In order to use the cursor, click briefly (less than 300ms) on the desired point on the graph.

This cursor line is assigned the following data:

- time (current date),
- relative time (elapsed time since reference zero),
- distance (the distance covered in relation to the reference zero)
- certain optional information, such as the train number, the name of a station, etc. This information is specific to each project and takes the form of variables in the <infos-parcours> of the XML file (maximum of three variables).

**Annotations:** (this function can be used in the other views).

You can insert annotations on certain messages in order to document the file.

Refer to sub-section 4.9 for further information.

**Captions:**

Using a right click option, it is possible to display or hide the captions field comprising the name of the variables displayed in the graphic view.

Another option also lets you display the name of some of the variables using a short format. In this case, the variables that have a full name in "xxx.yyy" format will simply be displayed in "yyy" format. For example, if the "Use short names" option is selected, then using the example shown in **Figure 6**

, "Info ATP1.Brake Rate" will be displayed simply as "Brake Rate".

This function is also available in the table view.

**Note:**

The reference point and time breaks assigned to various events are shifted to the next event when there is no event during the view. In this case, the lines that represent the reference zero and the time breaks are displayed in dotted lines in the same color.

As for the other marks (annotations, markers, etc.), they disappear when the assigned event cannot be displayed in the view.

## 4.6 View the journey in the tabular form

You can open a tabular or array view with the  icon or the "Views -> Tabular" menu.

The tabular view allows you to visualize a variable by column and follow variable evolution with a time scale, as shown in **Figure 7**

*This view comprises two types of column:*

- *Data columns calculated by SAM (gray background), that provide information on flags (markers assigned to some of the journey file events), the time (current date), the relative time (elapsed time in relation to reference zero), the distance (accumulated distance from the beginning of the journey file) and the relative distance (distance in relation to reference zero),*
- *Variable display columns (white background).*

The various flags available comprise:

- "**A**", to identify the annotations,
- "**{**", to identify the event following a power on (flag assigned to the "Power-on" event, when no filter is applied to this type of event),
- "**}**", to identify the event preceding a power on (flag preceding the "Power-on" event, when no filter is applied to this type of event),
- "**>**", to identify the reference point.
- "**T**", to identify a time break.
- "**D**", to identify a distance break.
- 

When a line does not have one of the flags listed above, the column Flag contains the number of the corresponding event in the list view.

The "###" symbol in a cell shows that the value of a variable cannot be displayed in this location of the journey as it has not yet been recorded by the recorder (for example the identity of the driver at the beginning of the mission before input).

Default view (with no filter applied):

Flag	Temps Absolu	Temps Relatif	Distance Cumulée (km)	Distance Relative (km)	Vitesse (km/h)	EL8 : Déclenche...	EL9 : Déclenche...	EL10 : Déclenche...	EL11 : Déclenche...	EL15 : BP IURG ...	EL1
2184	06/05/2012 19:22:52	-0h 2mn 32s	503,360	-0.940	30	faux	faux	faux	faux	VRAI	
2185	06/05/2012 19:22:52	-0h 2mn 32s	503,360	-0.940	30	faux	faux	faux	faux	VRAI	
2186	06/05/2012 19:22:52	-0h 2mn 32s	503,360	-0.940	30	faux	faux	faux	faux	VRAI	
2187	06/05/2012 19:22:52	-0h 2mn 32s	503,360	-0.940	30	faux	faux	faux	faux	VRAI	
2188	06/05/2012 19:23:02	-0h 2mn 22s	503,440	-0.860	28	faux	faux	faux	faux	VRAI	
2189	06/05/2012 19:23:04	-0h 2mn 20s	503,450	-0.850	28	faux	faux	faux	faux	VRAI	
2190	06/05/2012 19:23:04	-0h 2mn 20s	503,460	-0.840	28	faux	faux	faux	faux	VRAI	
2191	06/05/2012 19:23:04	-0h 2mn 20s	503,460	-0.840	27	faux	faux	faux	faux	VRAI	
2192	06/05/2012 19:23:06	-0h 2mn 18s	503,470	-0.830	27	faux	faux	faux	faux	VRAI	
2193	06/05/2012 19:23:06	-0h 2mn 18s	503,580	-0.720	25	faux	faux	faux	faux	VRAI	
2194	06/05/2012 19:23:06	-0h 2mn 18s	503,760	-0.540	24	faux	faux	faux	faux	VRAI	
2195	06/05/2012 19:24:08	-0h 1mn 16s	503,900	-0.400	25	faux	faux	faux	faux	VRAI	
2196	06/05/2012 19:24:10	-0h 1mn 14s	503,920	-0.380	24	faux	faux	faux	faux	VRAI	
2197	06/05/2012 19:24:16	-0h 1mn 8s	503,950	-0.350	23	faux	faux	faux	faux	VRAI	
2198	06/05/2012 19:24:16	-0h 1mn 8s	503,960	-0.340	22	faux	faux	faux	faux	VRAI	
2199	06/05/2012 19:24:16	-0h 1mn 8s	503,960	-0.340	22	faux	faux	faux	faux	VRAI	
2200	06/05/2012 19:24:24	-0h 1mn 0s	504,000	-0.300	24	faux	faux	faux	faux	VRAI	
2201	06/05/2012 19:24:26	-0h 0mn 58s	504,020	-0.280	24	faux	faux	faux	faux	VRAI	
2202	06/05/2012 19:25:00	-0h 0mn 24s	504,230	-0.070	22	faux	faux	faux	faux	VRAI	
2203	06/05/2012 19:25:00	-0h 0mn 24s	504,240	-0.060	20	faux	faux	faux	faux	VRAI	
2204	06/05/2012 19:25:00	-0h 0mn 24s	504,250	-0.050	17	faux	faux	faux	faux	VRAI	
2205	06/05/2012 19:25:00	-0h 0mn 24s	504,260	-0.040	15	faux	faux	faux	faux	VRAI	
2206	06/05/2012 19:25:08	-0h 0mn 16s	504,270	-0.030	13	faux	faux	faux	faux	VRAI	
2207	06/05/2012 19:25:08	-0h 0mn 16s	504,270	-0.030	12	faux	faux	faux	faux	VRAI	
2208	06/05/2012 19:25:08	-0h 0mn 16s	504,280	-0.020	10	faux	faux	faux	faux	VRAI	
2209	06/05/2012 19:25:08	-0h 0mn 16s	504,290	-0.010	7	faux	faux	faux	faux	VRAI	
2210	06/05/2012 19:25:08	-0h 0mn 16s	504,290	-0.010	5	faux	faux	faux	faux	VRAI	
2211	06/05/2012 19:25:08	-0h 0mn 16s	504,290	-0.010	2	faux	faux	faux	faux	VRAI	
>	06/05/2012 19:25:24	0h 0mn 0s	504,300	+0.000	0	faux	faux	faux	faux	VRAI	
2214	06/05/2012 19:25:26	+0h 0mn 2s	504,300	+0.000	0	faux	faux	faux	faux	VRAI	
2215	06/05/2012 19:25:26	+0h 0mn 2s	504,300	+0.000	0	faux	faux	faux	faux	VRAI	
2218	06/05/2012 19:26:34	+0h 1mn 10s	504,300	+0.000	0	faux	faux	faux	faux	VRAI	
2219	06/05/2012 19:26:34	+0h 1mn 10s	504,300	+0.000	0	faux	faux	faux	faux	VRAI	
2220	06/05/2012 19:26:36	+0h 1mn 12s	504,300	+0.000	0	faux	faux	faux	faux	VRAI	
2221	06/05/2012 19:26:38	+0h 1mn 14s	504,300	+0.000	0	faux	faux	faux	faux	VRAI	
2223	06/05/2012 19:26:44	+0h 1mn 20s	504,300	+0.000	3	faux	faux	faux	faux	VRAI	
2224	06/05/2012 19:26:44	+0h 1mn 20s	504,300	+0.000	5	faux	faux	faux	faux	VRAI	
2225	06/05/2012 19:26:44	+0h 1mn 20s	504,310	+0.010	8	faux	faux	faux	faux	VRAI	
2226	06/05/2012 19:26:44	+0h 1mn 20s	504,310	+0.010	10	faux	faux	faux	faux	VRAI	
2227	06/05/2012 19:26:44	+0h 1mn 20s	504,320	+0.020	13	faux	faux	faux	faux	VRAI	
2228	06/05/2012 19:26:44	+0h 1mn 20s	504,330	+0.030	15	faux	faux	faux	faux	VRAI	
2229	06/05/2012 19:26:44	+0h 1mn 20s	504,350	+0.050	18	faux	faux	faux	faux	VRAI	
2230	06/05/2012 19:26:44	+0h 1mn 20s	504,360	+0.060	20	faux	faux	faux	faux	VRAI	
2231	06/05/2012 19:26:44	+0h 1mn 20s	504,380	+0.080	23	faux	faux	faux	faux	VRAI	
2232	06/05/2012 19:27:10	+0h 1mn 46s	504,390	+0.090	23	faux	faux	faux	faux	VRAI	
2233	06/05/2012 19:27:12	+0h 1mn 48s	504,400	+0.100	24	faux	faux	faux	faux	VRAI	
2234	06/05/2012 19:27:30	+0h 2mn 6s	504,510	+0.210	23	faux	faux	faux	faux	VRAI	
2235	06/05/2012 19:27:30	+0h 2mn 6s	504,520	+0.220	20	faux	faux	faux	faux	VRAI	
2236	06/05/2012 19:27:30	+0h 2mn 6s	504,530	+0.230	17	faux	faux	faux	faux	VRAI	
2237	06/05/2012 19:27:30	+0h 2mn 6s	504,540	+0.240	15	faux	faux	faux	faux	VRAI	
2238	06/05/2012 19:27:30	+0h 2mn 6s	504,550	+0.250	12	faux	faux	faux	faux	VRAI	
2239	06/05/2012 19:27:30	+0h 2mn 6s	504,550	+0.250	10	faux	faux	faux	faux	VRAI	
2240	06/05/2012 19:27:30	+0h 2mn 6s	504,560	+0.260	7	faux	faux	faux	faux	VRAI	
2241	06/05/2012 19:27:30	+0h 2mn 6s	504,560	+0.260	5	faux	faux	faux	faux	VRAI	
2242	06/05/2012 19:27:42	+0h 2mn 18s	504,560	+0.260	4	faux	faux	faux	faux	VRAI	
2243	06/05/2012 19:27:46	+0h 2mn 22s	504,560	+0.260	3	faux	faux	faux	faux	VRAI	
2244	06/05/2012 19:27:48	+0h 2mn 24s	504,560	+0.260	3	faux	faux	faux	faux	VRAI	

Figure 7

By default, SAM creates a basic filter. This basic filter contains the speed and the first 16 simple or complex Boolean variables of the XML file.

It is also possible to select a specific filter in order to view a reduced number of variables (for information on how to use a filter, refer to §4.11). In this case, lines containing none of the variables selected will not be displayed.

To reduce the number of columns, the column manager can also be used (cf. § 4.15.3) in the context-sensitive menu (right-click).

View with a filter applied:

Flag	Temps Absolu	Temps Relatif	Distance Relativ...	Mes... Mesur...	Mes... Pressi...	Tensio...	Vitese (km/h)	Con...	Coup...	Var complexe ...
{	15/01/2008 23:53:40.10	+0h 2mn 0s 10		+0.003 ### ### ### ### ###			1.1	###	###	###
	15/01/2008 23:53:40.20	+0h 2mn 0s 20		+0.004 ### ### ### ### ###			1.1	###	###	###
A	15/01/2008 23:53:40.30	+0h 2mn 0s 30		+0.005 ### ### ### ### ###			1.1	###	###	###
9	15/01/2008 23:53:40.40	+0h 2mn 0s 40		+0.006 1 1.1 ### ### ###	1 1.1 2		1.1	###	###	###
10	15/01/2008 23:53:40.50	+0h 2mn 0s 50		+0.007 1 1.1 2 ### ###	1 1.1 2		1.1	###	###	###
11	15/01/2008 23:53:40.60	+0h 2mn 0s 60		+0.008 1 1.1 2 0.022	1 1.1 2 0.022		1.1	###	###	###
12	15/01/2008 23:53:40.70	+0h 2mn 0s 70		+0.009 1 1.1 2 0.022	1 1.1 2 0.022		1.1	1	###	###
13	15/01/2008 23:53:40.80	+0h 2mn 0s 80		+0.010 1 1.1 2 0.022	1 1.1 2 0.022		1.1	1	16384	###
14	15/01/2008 23:53:40.90	+0h 2mn 0s 90		+0.011 1 1.1 2 0.022	1 1.1 2 0.022		1.1	1	16384	1.1
22	15/01/2008 23:53:41.20	+0h 4mn 1s 20		+0.019 1 1.1 2 0.022	1 1.1 2 0.022		2.2	1	16384	1.1
23	15/01/2008 23:53:41.30	+0h 4mn 1s 30		+0.020 1 1.1 2 0.022	2		2.2	1	16384	1.1
24	15/01/2008 23:53:41.40	+0h 4mn 1s 40		+0.021 1 2.2 2 0.022	2 2.2 2 0.022		2.2	1	16384	1.1
25	15/01/2008 23:53:41.50	+0h 4mn 1s 50		+0.022 2 2.2 2 0.022	2 2.2 2 0.022		2.2	1	16384	1.1
26	15/01/2008 23:53:41.60	+0h 4mn 1s 60		+0.023 2 2.2 4 0.022	2 2.2 4 0.022		2.2	1	16384	1.1
27	15/01/2008 23:53:41.70	+0h 4mn 1s 70		+0.024 2 2.2 4 0.044	2 2.2 4 0.044		2.2	1	16384	1.1
28	15/01/2008 23:53:41.80	+0h 4mn 1s 80		+0.025 2 2.2 4 0.044	2 2.2 4 0.044		2.2	2	16384	1.1
29	15/01/2008 23:53:41.90	+0h 4mn 1s 90		+0.026 2 2.2 4 0.044	2 2.2 4 0.044		2.2	2	8192	1.1
30	15/01/2008 23:53:42.00	+0h 4mn 2s 00		+0.027 2 2.2 4 0.044	2 2.2 4 0.044		2.2	2	8192	2.2
38	15/01/2008 23:57:42.30	+0h 6mn 2s 30		+0.035 2 2.2 4 0.044	2 2.2 4 0.044		3.3	2	8192	2.2
39	15/01/2008 23:57:42.40	+0h 6mn 2s 40		+0.036 2 2.2 4 0.044	3.3		3.3	2	8192	2.2
40	15/01/2008 23:57:42.50	+0h 6mn 2s 50		+0.037 2 3.3 4 0.044	3 3.3 4 0.044		3.3	2	8192	2.2
41	15/01/2008 23:57:42.60	+0h 6mn 2s 60		+0.038 3 3.3 4 0.044	3 3.3 4 0.044		3.3	2	8192	2.2
42	15/01/2008 23:57:42.70	+0h 6mn 2s 70		+0.039 3 3.3 6 0.044	3 3.3 6 0.044		3.3	2	8192	2.2
43	15/01/2008 23:57:42.80	+0h 6mn 2s 80		+0.040 3 3.3 6 0.066	3 3.3 6 0.066		3.3	2	8192	2.2
44	15/01/2008 23:57:42.90	+0h 6mn 2s 90		+0.041 3 3.3 6 0.066	3 3.3 6 0.066		3.3	3	8192	2.2
45	15/01/2008 23:57:43.00	+0h 6mn 3s 00		+0.042 3 3.3 6 0.066	3 3.3 6 0.066		3.3	3	24576	2.2
46	15/01/2008 23:57:43.10	+0h 6mn 3s 10		+0.043 3 3.3 6 0.066	3 3.3 6 0.066		3.3	3	24576	3.3
54	15/01/2008 23:59:43.40	+0h 8mn 3s 40		+0.051 3 3.3 6 0.066	3 3.3 6 0.066		4.4	3	24576	3.3
55	15/01/2008 23:59:43.50	+0h 8mn 3s 50		+0.052 3 3.3 6 0.066	4.4		4.4	3	24576	3.3
56	15/01/2008 23:59:43.60	+0h 8mn 3s 60		+0.053 3 4.4 6 0.066	4 4.4 6 0.066		4.4	3	24576	3.3
57	15/01/2008 23:59:43.70	+0h 8mn 3s 70		+0.054 4 4.4 6 0.066	4 4.4 6 0.066		4.4	3	24576	3.3
58	15/01/2008 23:59:43.80	+0h 8mn 3s 80		+0.055 4 4.4 8 0.066	4 4.4 8 0.066		4.4	3	24576	3.3
59	15/01/2008 23:59:43.90	+0h 8mn 3s 90		+0.056 4 4.4 8 0.088	4 4.4 8 0.088		4.4	3	24576	3.3
60	15/01/2008 23:59:44.00	+0h 8mn 4s 00		+0.057 4 4.4 8 0.088	4 4.4 8 0.088		4.4	4	24576	3.3
61	15/01/2008 23:59:44.10	+0h 8mn 4s 10		+0.058 4 4.4 8 0.088	4 4.4 8 0.088		4.4	4	4096	3.3
62	15/01/2008 23:59:44.20	+0h 8mn 4s 20		+0.059 4 4.4 8 0.088	4 4.4 8 0.088		4.4	4	4096	4.4
71	16/01/2008 00:00:00.10	+0h 8mn 20s 10		+0.068 4 4.4 8 0.088	4 4.4 8 0.088		5.5	4	4096	4.4
72	16/01/2008 00:00:00.20	+0h 8mn 20s 20		+0.069 4 4.4 8 0.088	5.5		5.5	4	4096	4.4
73	16/01/2008 00:00:00.30	+0h 8mn 20s 30		+0.070 4 5.5 8 0.088	5.5 8 0.088		5.5	4	4096	4.4
74	16/01/2008 00:00:00.40	+0h 8mn 20s 40		+0.071 5 5.5 8 0.088	5.5 8 0.088		5.5	4	4096	4.4
75	16/01/2008 00:00:00.50	+0h 8mn 20s 50		+0.072 5 5.5 10 0.088	5.5 10 0.088		5.5	4	4096	4.4
76	16/01/2008 00:00:00.60	+0h 8mn 20s 60		+0.073 5 5.5 10 0.11	5 5.5 10 0.11		5.5	4	4096	4.4
77	16/01/2008 00:00:00.70	+0h 8mn 20s 70		+0.074 5 5.5 10 0.11	5.5 10 0.11		5.5	5	4096	4.4
78	16/01/2008 00:00:00.80	+0h 8mn 20s 80		+0.075 5 5.5 10 0.11	5.5 10 0.11		5.5	5	20480	4.4
79	16/01/2008 00:00:00.90	+0h 8mn 20s 90		+0.076 5 5.5 10 0.11	5.5 10 0.11		5.5	5	20480	5.5
87	16/01/2008 00:02:01.20	+0h 10mn 2s 20		+0.084 5 5.5 10 0.11	5.5 10 0.11		6.6	5	20480	5.5
88	16/01/2008 00:02:01.30	+0h 10mn 2s 30		+0.085 5 5.5 10 0.11	6.6		6.6	5	20480	5.5
89	16/01/2008 00:02:01.40	+0h 10mn 2s 40		+0.086 5 6.6 10 0.11	6.6 10 0.11		6.6	5	20480	5.5
90	16/01/2008 00:02:01.50	+0h 10mn 2s 50		+0.087 6 6.6 10 0.11	6.6 10 0.11		6.6	5	20480	5.5
91	16/01/2008 00:02:01.60	+0h 10mn 2s 60		+0.088 6 6.6 12 0.11	6.6 12 0.11		6.6	5	20480	5.5
92	16/01/2008 00:02:01.70	+0h 10mn 2s 70		+0.089 6 6.6 12 0.132	6.6 12 0.132		6.6	5	20480	5.5
93	16/01/2008 00:02:01.80	+0h 10mn 2s 80		+0.090 6 6.6 12 0.132	6.6 12 0.132		6.6	6	20480	5.5
94	16/01/2008 00:02:01.90	+0h 10mn 2s 90		+0.091 6 6.6 12 0.132	6.6 12 0.132		6.6	6	12288	5.5
95	16/01/2008 00:02:02.00	+0h 10mn 2s 00		+0.092 6 6.6 12 0.132	6.6 12 0.132		6.6	6	12288	6.6
103	16/01/2008 00:04:02.30	+0h 12mn 2s 30		+0.100 6 6.6 12 0.132	6.6 12 0.132		7.7	6	12288	6.6
104	16/01/2008 00:04:02.40	+0h 12mn 2s 40		+0.101 6 6.6 12 0.132	7.7		7.7	6	12288	6.6
105	16/01/2008 00:04:02.50	+0h 12mn 2s 50		+0.102 6 7.7 12 0.132	7.7 12 0.132		7.7	6	12288	6.6
106	16/01/2008 00:04:02.60	+0h 12mn 2s 60		+0.103 7 7.7 12 0.132	7.7 12 0.132		7.7	6	12288	6.6
107	16/01/2008 00:04:02.70	+0h 12mn 2s 70		+0.104 7 7.7 14 0.132	7.7 14 0.132		7.7	6	12288	6.6
108	16/01/2008 00:04:02.80	+0h 12mn 2s 80		+0.105 7 7.7 14 0.154	7.7 14 0.154		7.7	6	12288	6.6

Figure 8

#### Notes:

All of the marks like the reference point, annotations, markers, etc. disappear when the assigned event cannot be displayed in the view (e.g. when applying a filter).

The name of the filter applied appears in square brackets next to the name of the view.

## 4.7 View the journey in the form of a list of events

You can open a list view with the  icon or the "*Views -> List*" menu.

The list view, as shown in *Figure 9*, presents a succession of messages in sequential command such as they are recorded in the journey files.

A message consists of an event identifier and a number of variables assigned to it.

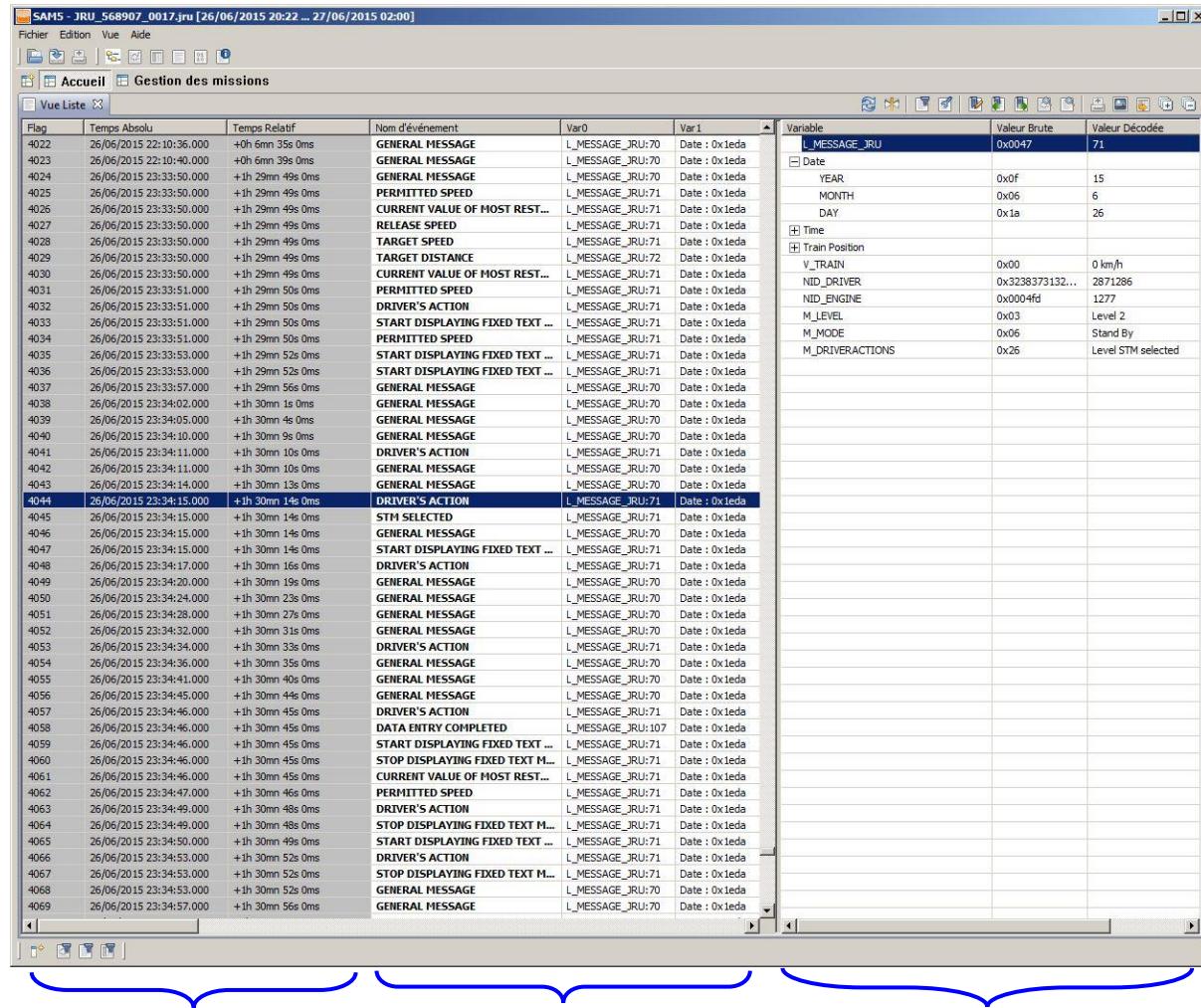
This view comprises two types of column:

- Data columns calculated by SAM (gray background), that provide information on flags (markers assigned to some of the journey file events), the time (current date), the relative time (elapsed time in relation to reference zero), *the distance (accumulated distance from the beginning of the journey file)* and the relative distance (distance traveled in relation to reference zero),
- Variable display columns (white background).

The various flags available comprise:

- "**A**", to identify the annotations,
- "**{**", to identify the event following a power on (flag assigned to the "Power-on" event, when no filter is applied to this type of event),
- "**}**", to identify the event preceding a power on (flag preceding the "Power-on" event, when no filter is applied to this type of event),
- "**>**", to identify the reference zero.
- "**T**", to identify a time break.
- "**D**", to identify a distance break.

Default view (with no filter applied):



Flag	Temps Absolu	Temps Relatif	Nom d'événement	Var0	Var1	Variable	Valeur Brute	Valeur Décodée
4022	26/06/2015 22:10:36,000	+0h 6mn 35s 0ms	GENERAL MESSAGE	L_MESSAGE_JRU:70	Date : 0x1eda	L_MESSAGE_JRU	0x0047	71
4023	26/06/2015 22:10:40,000	+0h 6mn 39s 0ms	GENERAL MESSAGE	L_MESSAGE_JRU:70	Date : 0x1eda	DATE	0x0f	15
4024	26/06/2015 22:13:50,000	+1h 29mn 49s 0ms	GENERAL MESSAGE	L_MESSAGE_JRU:70	Date : 0x1eda	MONTH	0x06	6
4025	26/06/2015 23:33:50,000	+1h 29mn 49s 0ms	PERMITTED SPEED	L_MESSAGE_JRU:71	Date : 0x1eda	DAY	0x1a	26
4026	26/06/2015 23:33:50,000	+1h 29mn 49s 0ms	CURRENT VALUE OF MOST REST...	L_MESSAGE_JRU:71	Date : 0x1eda	TIME		
4027	26/06/2015 23:33:50,000	+1h 29mn 49s 0ms	RELEASE SPEED	L_MESSAGE_JRU:71	Date : 0x1eda	TRAIN POSITION		
4028	26/06/2015 23:33:50,000	+1h 29mn 49s 0ms	TARGET SPEED	L_MESSAGE_JRU:71	Date : 0x1eda	NID_DRIVER	0x3238373132...	2871286
4029	26/06/2015 23:33:50,000	+1h 29mn 49s 0ms	TARGET DISTANCE	L_MESSAGE_JRU:72	Date : 0x1eda	NID_ENGINE	0x0004fd	1277
4030	26/06/2015 23:33:50,000	+1h 29mn 49s 0ms	CURRENT VALUE OF MOST REST...	L_MESSAGE_JRU:72	Date : 0x1eda	M_LEVEL	0x03	Level 2
4031	26/06/2015 23:33:51,000	+1h 29mn 50s 0ms	PERMITTED SPEED	L_MESSAGE_JRU:71	Date : 0x1eda	M_MODE	0x06	Stand By
4032	26/06/2015 23:33:51,000	+1h 29mn 50s 0ms	DRIVER'S ACTION	L_MESSAGE_JRU:71	Date : 0x1eda	M_DRIVERRACTIONS	0x26	Level STM selected
4033	26/06/2015 23:33:51,000	+1h 29mn 50s 0ms	START DISPLAYING FIXED TEXT ...	L_MESSAGE_JRU:71	Date : 0x1eda			
4034	26/06/2015 23:33:51,000	+1h 29mn 50s 0ms	PERMITTED SPEED	L_MESSAGE_JRU:71	Date : 0x1eda			
4035	26/06/2015 23:33:53,000	+1h 29mn 52s 0ms	START DISPLAYING FIXED TEXT ...	L_MESSAGE_JRU:71	Date : 0x1eda			
4036	26/06/2015 23:33:53,000	+1h 29mn 52s 0ms	START DISPLAYING FIXED TEXT ...	L_MESSAGE_JRU:71	Date : 0x1eda			
4037	26/06/2015 23:33:57,000	+1h 29mn 56s 0ms	GENERAL MESSAGE	L_MESSAGE_JRU:70	Date : 0x1eda			
4038	26/06/2015 23:34:02,000	+1h 30mn 1s 0ms	GENERAL MESSAGE	L_MESSAGE_JRU:70	Date : 0x1eda			
4039	26/06/2015 23:34:05,000	+1h 30mn 4s 0ms	GENERAL MESSAGE	L_MESSAGE_JRU:70	Date : 0x1eda			
4040	26/06/2015 23:34:10,000	+1h 30mn 9s 0ms	GENERAL MESSAGE	L_MESSAGE_JRU:70	Date : 0x1eda			
4041	26/06/2015 23:34:11,000	+1h 30mn 10s 0ms	DRIVER'S ACTION	L_MESSAGE_JRU:71	Date : 0x1eda			
4042	26/06/2015 23:34:11,000	+1h 30mn 10s 0ms	GENERAL MESSAGE	L_MESSAGE_JRU:70	Date : 0x1eda			
4043	26/06/2015 23:34:14,000	+1h 30mn 13s 0ms	GENERAL MESSAGE	L_MESSAGE_JRU:70	Date : 0x1eda			
4044	26/06/2015 23:34:15,000	+1h 30mn 14s 0ms	DRIVER'S ACTION	L_MESSAGE_JRU:71	Date : 0x1eda			
4045	26/06/2015 23:34:15,000	+1h 30mn 14s 0ms	STM SELECTED	L_MESSAGE_JRU:71	Date : 0x1eda			
4046	26/06/2015 23:34:15,000	+1h 30mn 14s 0ms	GENERAL MESSAGE	L_MESSAGE_JRU:70	Date : 0x1eda			
4047	26/06/2015 23:34:15,000	+1h 30mn 14s 0ms	START DISPLAYING FIXED TEXT ...	L_MESSAGE_JRU:71	Date : 0x1eda			
4048	26/06/2015 23:34:17,000	+1h 30mn 16s 0ms	DRIVER'S ACTION	L_MESSAGE_JRU:71	Date : 0x1eda			
4049	26/06/2015 23:34:20,000	+1h 30mn 19s 0ms	GENERAL MESSAGE	L_MESSAGE_JRU:70	Date : 0x1eda			
4050	26/06/2015 23:34:24,000	+1h 30mn 23s 0ms	GENERAL MESSAGE	L_MESSAGE_JRU:70	Date : 0x1eda			
4051	26/06/2015 23:34:26,000	+1h 30mn 27s 0ms	GENERAL MESSAGE	L_MESSAGE_JRU:70	Date : 0x1eda			
4052	26/06/2015 23:34:32,000	+1h 30mn 31s 0ms	GENERAL MESSAGE	L_MESSAGE_JRU:70	Date : 0x1eda			
4053	26/06/2015 23:34:34,000	+1h 30mn 33s 0ms	DRIVER'S ACTION	L_MESSAGE_JRU:71	Date : 0x1eda			
4054	26/06/2015 23:34:36,000	+1h 30mn 35s 0ms	GENERAL MESSAGE	L_MESSAGE_JRU:70	Date : 0x1eda			
4055	26/06/2015 23:34:41,000	+1h 30mn 40s 0ms	GENERAL MESSAGE	L_MESSAGE_JRU:70	Date : 0x1eda			
4056	26/06/2015 23:34:45,000	+1h 30mn 44s 0ms	GENERAL MESSAGE	L_MESSAGE_JRU:70	Date : 0x1eda			
4057	26/06/2015 23:34:46,000	+1h 30mn 45s 0ms	DRIVER'S ACTION	L_MESSAGE_JRU:71	Date : 0x1eda			
4058	26/06/2015 23:34:46,000	+1h 30mn 45s 0ms	DATA ENTRY COMPLETED	L_MESSAGE_JRU:107	Date : 0x1eda			
4059	26/06/2015 23:34:46,000	+1h 30mn 45s 0ms	START DISPLAYING FIXED TEXT ...	L_MESSAGE_JRU:71	Date : 0x1eda			
4060	26/06/2015 23:34:46,000	+1h 30mn 45s 0ms	STOP DISPLAYING FIXED TEXT ...	L_MESSAGE_JRU:71	Date : 0x1eda			
4061	26/06/2015 23:34:46,000	+1h 30mn 45s 0ms	CURRENT VALUE OF MOST REST...	L_MESSAGE_JRU:71	Date : 0x1eda			
4062	26/06/2015 23:34:47,000	+1h 30mn 46s 0ms	PERMITTED SPEED	L_MESSAGE_JRU:71	Date : 0x1eda			
4063	26/06/2015 23:34:49,000	+1h 30mn 48s 0ms	DRIVER'S ACTION	L_MESSAGE_JRU:71	Date : 0x1eda			
4064	26/06/2015 23:34:49,000	+1h 30mn 48s 0ms	STOP DISPLAYING FIXED TEXT ...	L_MESSAGE_JRU:71	Date : 0x1eda			
4065	26/06/2015 23:34:50,000	+1h 30mn 49s 0ms	START DISPLAYING FIXED TEXT ...	L_MESSAGE_JRU:71	Date : 0x1eda			
4066	26/06/2015 23:34:53,000	+1h 30mn 52s 0ms	DRIVER'S ACTION	L_MESSAGE_JRU:71	Date : 0x1eda			
4067	26/06/2015 23:34:53,000	+1h 30mn 52s 0ms	STOP DISPLAYING FIXED TEXT ...	L_MESSAGE_JRU:71	Date : 0x1eda			
4068	26/06/2015 23:34:53,000	+1h 30mn 52s 0ms	GENERAL MESSAGE	L_MESSAGE_JRU:70	Date : 0x1eda			
4069	26/06/2015 23:34:57,000	+1h 30mn 56s 0ms	GENERAL MESSAGE	L_MESSAGE_JRU:70	Date : 0x1eda			

Message number +  
Date and Time

Event name and event  
variables

Value of variables for the  
event selected

Figure 9

By default, all of the variables handled by the recorder are shown in this view. It is however possible to choose a specific filter in order to display a reduced number of variables (for information on how to use a filter, refer to sub-section **4.112**).

View with a filter applied:

Flag	Temps Absolu	Temps Relatif	Nom d'événement	Var0	Va	Variable	Valeur Brute	Valeur Décodée
4010	26/06/2015 22:09:55.000	+0h 5mn 54s 0ms	GENERAL MESSAGE	L_MESSAGE_JRU:70	Da	L_MESSAGE_JRU	0x0046	70
4011	26/06/2015 22:09:59.000	+0h 5mn 58s 0ms	GENERAL MESSAGE	L_MESSAGE_JRU:70	Da	Date		
4012	26/06/2015 22:10:03.000	+0h 6mn 2s 0ms	GENERAL MESSAGE	L_MESSAGE_JRU:70	Da	Time		
4013	26/06/2015 22:10:08.000	+0h 6mn 7s 0ms	GENERAL MESSAGE	L_MESSAGE_JRU:70	Da	Train Position		
4014	26/06/2015 22:10:12.000	+0h 6mn 11s 0ms	GENERAL MESSAGE	L_MESSAGE_JRU:70	Da	V_TRAIN	0x00	0 km/h
4015	26/06/2015 22:10:16.000	+0h 6mn 15s 0ms	GENERAL MESSAGE	L_MESSAGE_JRU:70	Da	NID_DRIVER	0x3238373132...	2871286
4016	26/06/2015 22:10:20.000	+0h 6mn 19s 0ms	GENERAL MESSAGE	L_MESSAGE_JRU:70	Da	NID_ENGINE	0x0004fd	1277
4018	26/06/2015 22:10:23.000	+0h 6mn 22s 0ms	GENERAL MESSAGE	L_MESSAGE_JRU:70	Da	M_LEVEL	0x03	Level 2
4019	26/06/2015 22:10:24.000	+0h 6mn 23s 0ms	GENERAL MESSAGE	L_MESSAGE_JRU:70	Da	M_MODE	0x06	Stand By
4020	26/06/2015 22:10:28.000	+0h 6mn 27s 0ms	GENERAL MESSAGE	L_MESSAGE_JRU:70	Da			
4021	26/06/2015 22:10:32.000	+0h 6mn 31s 0ms	GENERAL MESSAGE	L_MESSAGE_JRU:70	Da			
4022	26/06/2015 22:10:36.000	+0h 6mn 35s 0ms	GENERAL MESSAGE	L_MESSAGE_JRU:70	Da			
4023	26/06/2015 22:10:40.000	+0h 6mn 39s 0ms	GENERAL MESSAGE	L_MESSAGE_JRU:70	Da			
4024	26/06/2015 23:33:50.000	+1h 29mn 49s 0ms	GENERAL MESSAGE	L_MESSAGE_JRU:70	Da			
4037	26/06/2015 23:33:57.000	+1h 29mn 56s 0ms	GENERAL MESSAGE	L_MESSAGE_JRU:70	Da			
4038	26/06/2015 23:34:02.000	+1h 30mn 1s 0ms	GENERAL MESSAGE	L_MESSAGE_JRU:70	Da			
4039	26/06/2015 23:34:05.000	+1h 30mn 4s 0ms	GENERAL MESSAGE	L_MESSAGE_JRU:70	Da			
4040	26/06/2015 23:34:10.000	+1h 30mn 9s 0ms	GENERAL MESSAGE	L_MESSAGE_JRU:70	Da			
4042	26/06/2015 23:34:11.000	+1h 30mn 10s 0ms	GENERAL MESSAGE	L_MESSAGE_JRU:70	Da			
4043	26/05/2015 23:34:14.000	+1h 30mn 13s 0ms	GENERAL MESSAGE	L_MESSAGE_JRU:70	Da			
4046	26/06/2015 23:34:15.000	+1h 30mn 14s 0ms	GENERAL MESSAGE	L_MESSAGE_JRU:70	Da			
4049	26/06/2015 23:34:20.000	+1h 30mn 19s 0ms	GENERAL MESSAGE	L_MESSAGE_JRU:70	Da			
4050	26/06/2015 23:34:24.000	+1h 30mn 23s 0ms	GENERAL MESSAGE	L_MESSAGE_JRU:70	Da			
4051	26/06/2015 23:34:28.000	+1h 30mn 27s 0ms	GENERAL MESSAGE	L_MESSAGE_JRU:70	Da			
4052	26/06/2015 23:34:32.000	+1h 30mn 31s 0ms	GENERAL MESSAGE	L_MESSAGE_JRU:70	Da			
4054	26/06/2015 23:34:36.000	+1h 30mn 35s 0ms	GENERAL MESSAGE	L_MESSAGE_JRU:70	Da			
4055	26/06/2015 23:34:41.000	+1h 30mn 40s 0ms	GENERAL MESSAGE	L_MESSAGE_JRU:70	Da			
4056	26/06/2015 23:34:45.000	+1h 30mn 44s 0ms	GENERAL MESSAGE	L_MESSAGE_JRU:70	Da			
4068	26/06/2015 23:34:53.000	+1h 30mn 52s 0ms	GENERAL MESSAGE	L_MESSAGE_JRU:70	Da			
4069	26/06/2015 23:34:57.000	+1h 30mn 56s 0ms	GENERAL MESSAGE	L_MESSAGE_JRU:70	Da			
4070	26/06/2015 23:35:02.000	+1h 31mn 1s 0ms	GENERAL MESSAGE	L_MESSAGE_JRU:70	Da			
4071	26/06/2015 23:35:06.000	+1h 31mn 5s 0ms	GENERAL MESSAGE	L_MESSAGE_JRU:70	Da			
4072	26/06/2015 23:35:10.000	+1h 31mn 9s 0ms	GENERAL MESSAGE	L_MESSAGE_JRU:70	Da			
4073	26/06/2015 23:35:13.000	+1h 31mn 12s 0ms	GENERAL MESSAGE	L_MESSAGE_JRU:70	Da			
4074	26/06/2015 23:35:17.000	+1h 31mn 16s 0ms	GENERAL MESSAGE	L_MESSAGE_JRU:70	Da			
4075	26/06/2015 23:35:21.000	+1h 31mn 20s 0ms	GENERAL MESSAGE	L_MESSAGE_JRU:70	Da			
4076	26/06/2015 23:35:26.000	+1h 31mn 25s 0ms	GENERAL MESSAGE	L_MESSAGE_JRU:70	Da			
4077	26/06/2015 23:35:30.000	+1h 31mn 29s 0ms	GENERAL MESSAGE	L_MESSAGE_JRU:70	Da			
4078	26/06/2015 23:35:34.000	+1h 31mn 33s 0ms	GENERAL MESSAGE	L_MESSAGE_JRU:70	Da			
4079	26/06/2015 23:35:38.000	+1h 31mn 37s 0ms	GENERAL MESSAGE	L_MESSAGE_JRU:70	Da			
4080	26/06/2015 23:35:42.000	+1h 31mn 41s 0ms	GENERAL MESSAGE	L_MESSAGE_JRU:70	Da			
4081	26/06/2015 23:35:47.000	+1h 31mn 46s 0ms	GENERAL MESSAGE	L_MESSAGE_JRU:70	Da			

Figure 10

#### Notes:

All of the marks like the reference point, annotations, markers, etc. disappear when the assigned event cannot be displayed in the view (e.g. when applying a filter).

The name of the filter applied appears in square brackets next to the name of the view



## 4.8 View the journey in the binary form

You can open a Binary view with the  icon or the "*Views -> Binary*" menu.

The binary view, as shown in **Figure 11**, is a raw binary representation of the recordings in the journey file.

SAM 5 - VALID_SAM_5_FILE1.tbf																	
Eichier Edition Vue Aide																	
Perspective Par Défaut																	
Vue Binaire																	
Num...	1	13	00	01	83	12	b0	00	00	00	0b	78	51	86	ff	ff	83
1	13	00	01	83	12	b0	00	00	00	00	0b	78	51	86	ff	ff	83
2	13	00	00	15	83	12	b0	00	00	00	03	7a	20	1e	d6	ff	83
3	13	00	00	15	83	12	b0	00	00	00	03	7a	20	1e	d6	ff	e3
4	13	00	00	15	83	12	b0	00	00	00	03	7a	20	1e	d6	ff	83
5	73	00	00	15	83	12	b0	00	00	00	03	7a	20	1e	d6	ff	83
6	13	01	2c	83	12	b0	00	00	00	00	00	00	00	00	00	00	e3
7	73	00	00	00	00	00	00	00	00	00	00	00	00	00	7c	3b	83
8	13	01	50	83	41	90	00	00	01	00	69	37	55	aa	55	83	
9	13	01	41	83	41	90	00	00	02	01	56	22	ff	ff	ff	ff	83
10	13	00	14	83	41	9a	00	00	03	00	0b	3f	f5	ff	ff	ff	83
11	15	00	14	83	41	9a	00	00	03	00	0b	3f	f5	ff	ff	85	
12	13	00	c6	83	41	a4	00	00	04	3f	8c	cc	cd	63	96	83	
13	13	00	c9	83	41	ae	00	00	05	3f	f1	99	99	99	99	e3	
14	73	99	9a	c2	00	ff	83										
15	13	00	ca	83	41	b8	00	00	06	01	50	72	ff	ff	ff	ff	83
16	18	00	c9	83	41	ae	00	00	06	3f	f1	99	99	99	99	e8	
17	78	99	9a	ef	44	ff	88										
18	18	00	ca	83	41	b8	00	00	07	01	63	43	ff	ff	ff	ff	88
19	13	00	cb	83	41	c2	00	00	07	00	02	24	0b	ff	ff	ff	83
20	13	00	cc	83	41	cc	00	00	08	00	00	00	16	b5	8b	83	
21	13	00	cd	83	41	d6	00	00	09	01	51	20	ff	ff	ff	ff	83
22	13	00	ce	83	41	e0	00	00	0a	00	02	af	de	ff	ff	ff	83
23	13	01	2d	83	41	ea	00	00	0b	10	80	0b	00	00	00	e3	
24	73	0d	54	45	53	54	20	53	41	4d	20	31	bc	79	ff	83	
25	13	02	5a	83	41	f4	00	00	0c	01	18	80	31	30	20	e3	
26	73	4d	41	53	20	32	20	54	53	45	54	33	37	ff	ff	83	
27	13	0b	bd	83	41	fe	00	00	0d	30	39	00	73	00	00	e3	
28	73	00	00	00	00	40	18	17	ff	83							
29	13	0b	be	83	41	fe	00	00	0e	64	65	c4	9f	c4	b1	e3	
30	73	c5	9f	74	69	00	00	00	00	00	90	52	ff	ff	ff	83	
31	13	0b	bf	83	41	fe	00	00	0f	11	a6	32	28	58	3d	e3	
32	73	3d	3d	00	00	01	01	e7	a2	ff	ff	ff	ff	ff	ff	83	
33	13	0b	be	83	41	fe	00	00	0e	64	65	c4	9f	c4	b1	83	
34	13	c5	9f	74	69	00	00	00	00	00	90	52	ff	ff	ff	83	
35	13	01	2c	83	41	fe	00	00	10	00	01	01	00	00	00	e3	
36	73	00	00	00	00	00	00	00	00	00	00	00	5d	1b	83		
37	13	01	41	83	70	de	00	00	11	00	a4	c7	ff	ff	ff	83	
38	13	01	42	83	70	de	00	00	12	01	29	c8	ff	ff	ff	83	
39	13	00	14	83	70	e8	00	00	13	00	16	90	3a	ff	ff	83	
40	13	00	c8	83	70	f2	00	00	14	40	0c	cc	cd	9e	83	83	
41	13	00	c9	83	70	fc	00	00	15	40	01	99	99	99	99	e3	
42	73	99	9a	45	ed	ff	83										
43	13	00	ca	83	71	06	00	00	16	02	ad	78	ff	ff	ff	83	
44	13	nn	rb	83	71	10	nn	nn	17	nn	n4	71	d7	ff	ff	83	

Figure 11

## 4.9 Managing Annotations

You can place annotations in the various journey file messages. These annotations are saved in a file linked to the journey file that is open.

To add an annotation to a message, select the message, then click on the  icon in the current view.

The "**File -> Save annotations**" command in the main menu *or* the  icon on the toolbar can be used to save the annotations added by the user.

An annotation is identified by a green highlighted line in the "List", "Tabular" and "Graphic" views.

You can see the "Annotations" view by means of the "**View -> Annotations**" menu. Each annotation comprises the following information:

- time (current date),
- distance (distance between the annotation and the beginning of the journey file),
- the name assigned to this mark.

when they are calculated (refer to **Figure 12**).

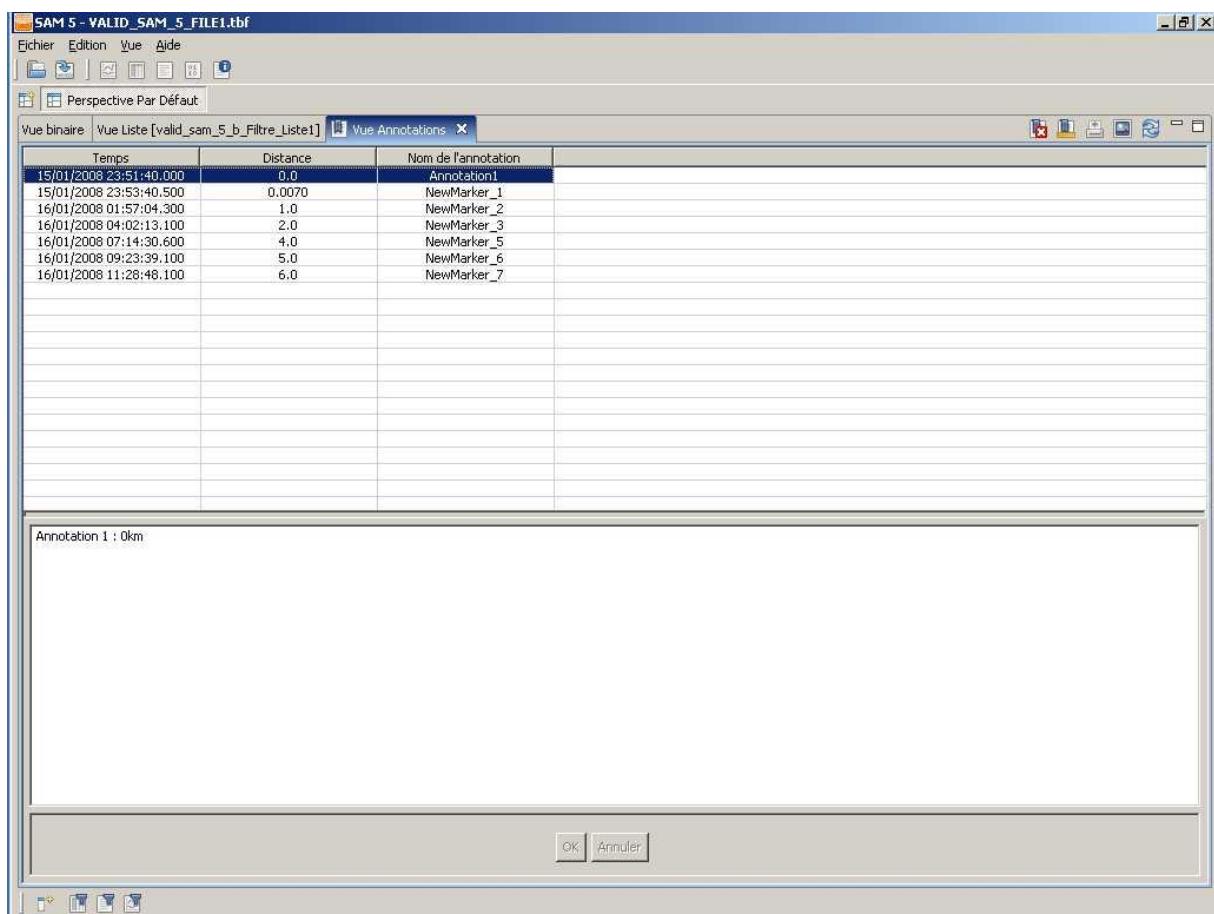


Figure 12

### **Browsing annotations:**

The system allows to browse annotations in a view in both directions by using the  or  icons in the main HMI, according to the direction required.

All the views can be synchronized (refer to § **4.10**) and consequently you can follow this browsing from annotation to annotation.

### **Measuring between annotations:**

From the “Delta annotations” window (see **Figure 13**), you can see the differences in the values of data that is common to events designated between two annotations.

Just open the "Annotations" view and select two annotations while holding the "Ctrl" key pressed, then open the "Delta annotations" view using the  icon.

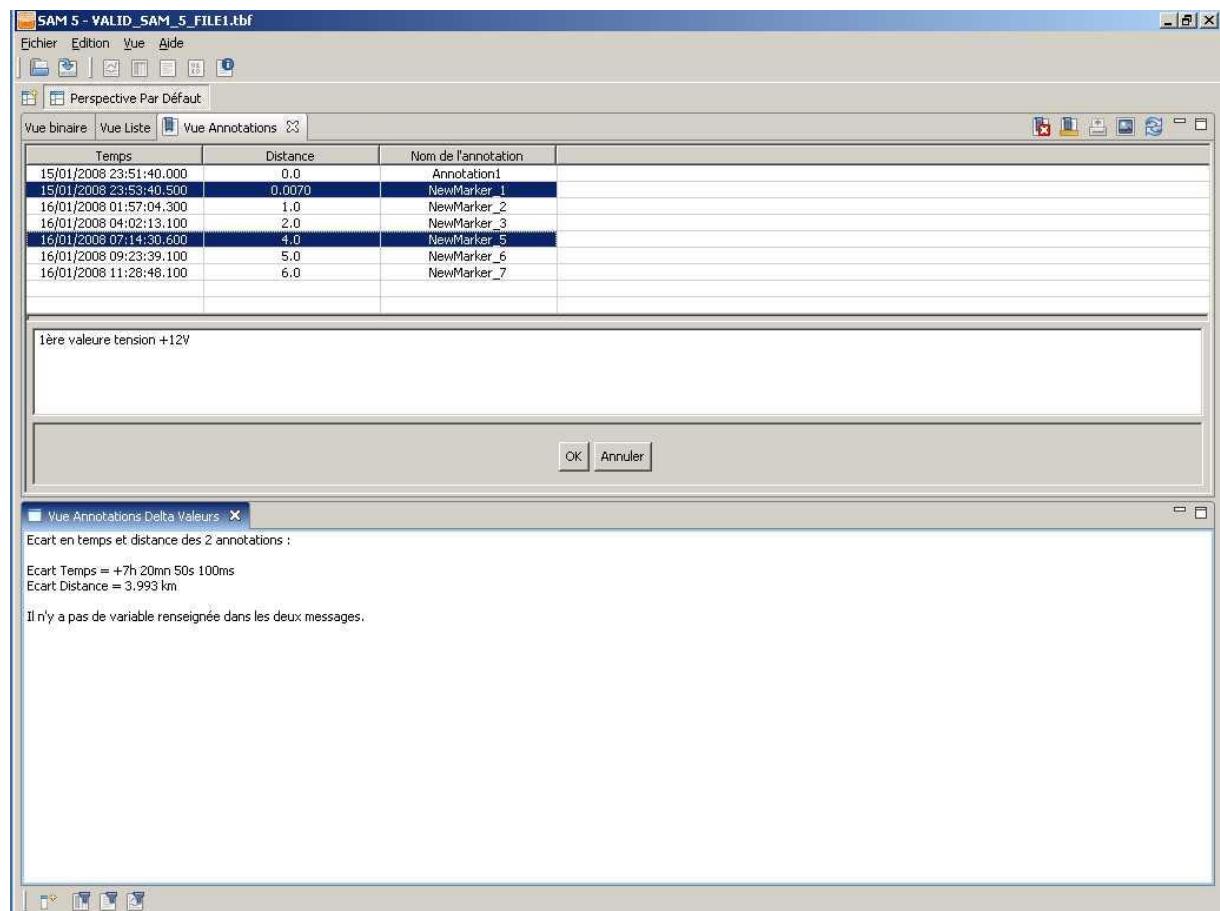


Figure 13

## 4.10 Synchronizing the views

In order to place the cursor, click on a message in one of the views, the cursor will then be displayed: it consists of a black line in the graphic view and the line is blue in the other views.

To synchronize views, double click a message in the current view, or press the « Enter » key after positioning the cursor on the message required in the current view.

**Figure 14** shows the graphic, list and tabular views all synchronized.

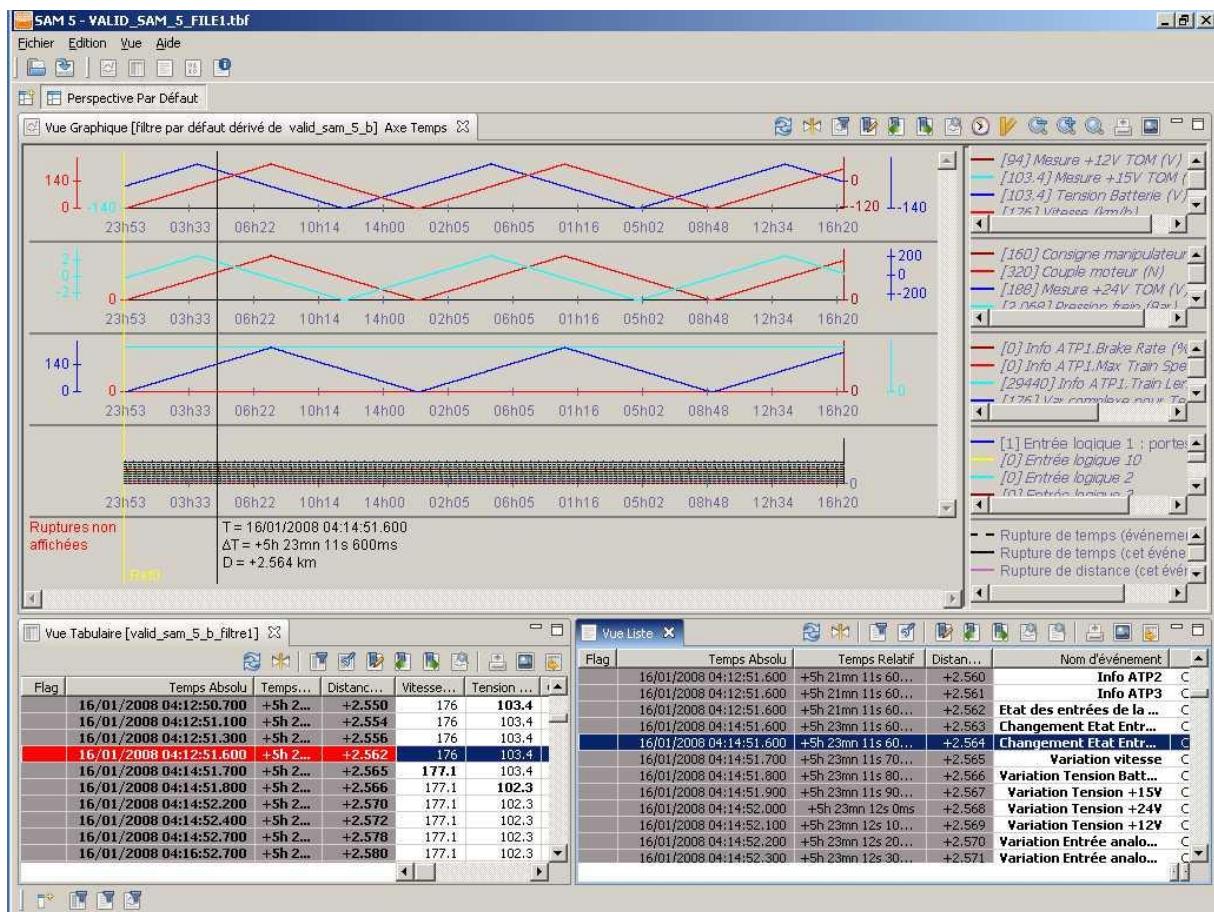


Figure 14

## 4.11 Managing virtual variables

The application lets you manage virtual variables, variables from an equation that use either existing variables or virtual variables that are already defined.

In the latter case, the system lets you use up to 20 levels of virtual variable nesting. It is therefore possible to create up to a maximum of 100 virtual variables.

All of the virtual variables can be used in all SAM functions (filters, searches, ...). They are displayed in the different popup lists assigned to the available variables.

The virtual variable management IHM is split into two parts:

- The "**Variables List**" part (the left hand side of the window) used to view all of the virtual variables defined as well as their exact makeup.
- The "**Variable Details**" part (the right hand side of the window) used to edit each variable. An information field is provided in the lower part of this window to remind the user of the various operations required to create/modify/delete a virtual variable.

Virtual variables are stored in the SAM environment (variables are retained even after the application is shutdown).

A check is run on the virtual variables before every save, to ensure that formulas are coherent. If an incoherent variable is present, a message is displayed for the user (and the affected variable is not saved).

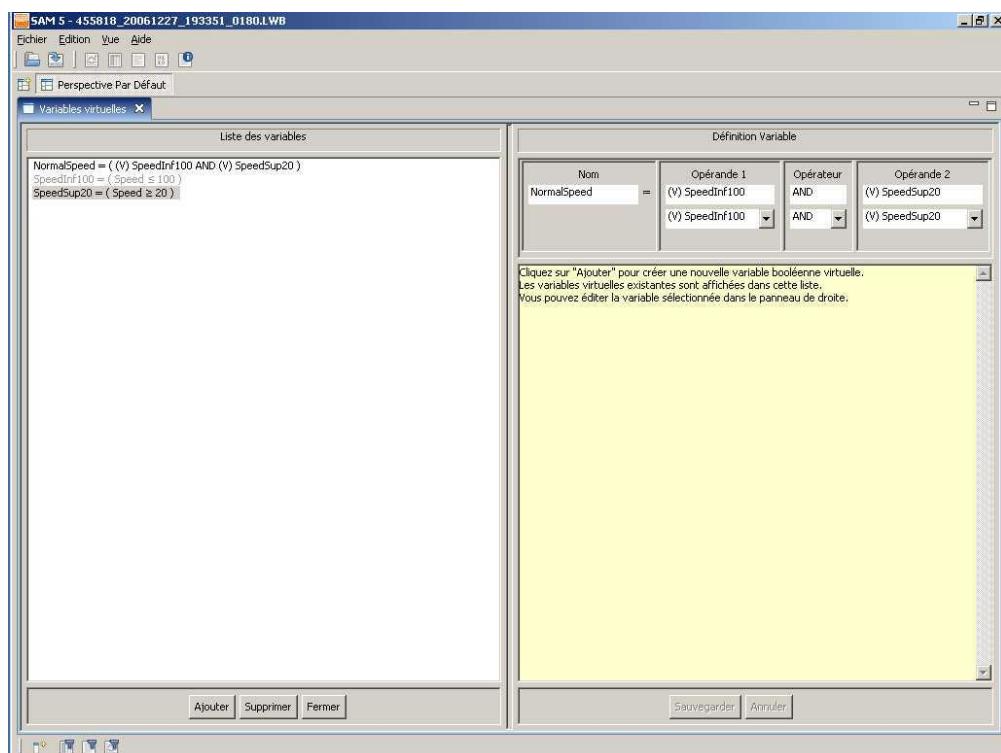


Figure 15

### 4.11.1 Creating

To create a virtual variable simply click on the "**Add**" button in the "**Variables List**" part, then fill-in the various fields in the "**Variable Details**" part:

- Use the "**Name**" field to fill-in the name of the virtual variable to create.
- Use the "**Operand 1**" fields to fill-in, manually or via the popup list, the name of the first variable to be used in the formula.
- Use the "**Operator**" fields to fill-in, manually or via the popup list, the name of the operator to be used in the formula.
- Use the "**Operand 2**", fields to fill-in, manually or via the popup list, the name of the second operand (the name of a variable or a value) to be used in the formula.

After creating the virtual variable, click on the "**Save**" button in the "**Variable Details**" part to save the newly created variable (the "**Cancel**" button lets you abort the data entry process without saving the definition of the variable).

### 4.11.2 Modifying

To modify a virtual variable, go to the "**Variables List**" part and select the line that corresponds to the variable to be modified, then make the modifications required in the "**Variable Details**" part.

After modifying the virtual variable, click on the "**Save**" button in the "**Variable Details**" part to save it (the "**Cancel**" button lets you abort the data entry process without saving the definition of the variable).

### 4.11.3 Deleting

To delete a variable, go to the "**Variables List**" part and select the line that corresponds to the variable to be deleted, then click on the "**Delete**" button.

If this virtual variable is also used by another virtual variable or by another SAM function (filter, ...), then an error message is displayed for the user to show the reason why this variable cannot be deleted.

## 4.12 Filtering a view

In order to limit the amount of information displayed, and to make it easier to read, you have the possibility of creating/changing and using filters.

A filter type is associated with each of these three views (graphic, list and tabular).

In each view, a dedicated icon ( /  / ) is provided to launch the filter manager associated with this view. Right click in the view to open a drop-down menu that can also be used to open the filter editor or select an existing filter (see sub-section 4.12.3).

The edit filter window is displayed as follows:

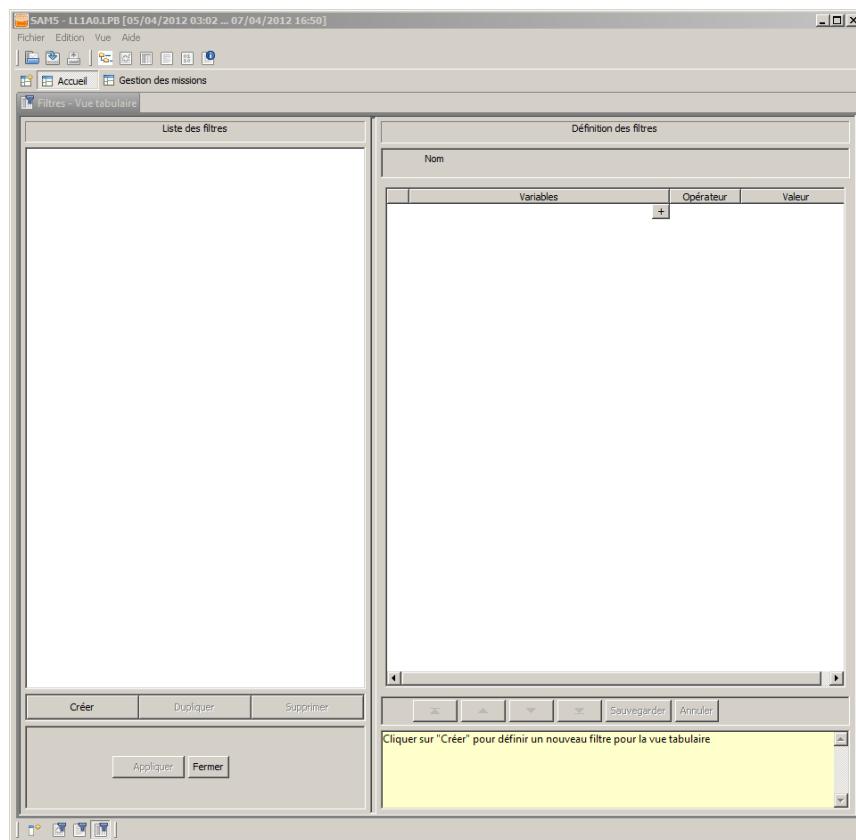


Figure 16

### 4.12.1 Creating or changing filters

The "Create" button creates a new filter, the "Delete" button deletes the selected filter in the list. To change a filter, select it from the left-hand side of the editor and change its content on the right-hand side. The yellow box contains helpful information used to guide the user on the actions to be performed.

**Note: When creating a filter, SAM refers to the configuration of the open journey file. You must therefore open a journey file in order to use the filter manager.**

#### 4.12.1.1 Filters on the graphic view

If the chosen filter is a filter on a graphic view, the user must firstly choose the graphic type (analog or digital) for each of the four axes available. An analog graphic can contain up to 4 analog variables, whereas a digital graphic can contain up to 10 boolean variables (see **Figure 17**). After clicking on the "+" sign, a variable is added in a graphic using a dialog box, the use of which is described in sub-section 4.12.2. A graphic variable is deleted by clicking on the "-" sign.

The color associated with the variable can be configured via a pull-down list in the "Color" column.

The display order of the graphs in the view and the variables in each graph can be configured using the arrow keys:

- to position the selected graph in first position (at the top) in the graphic view or to position the selected variable in the first line of the graph.
- ▲ to raise the selected graph by one position in the graphic view or to raise the selected variable by one position in the graph.
- ▼ to lower the selected graph by one position in the graphic view or to lower the selected variable by one position in the graph.
- to position the selected graph in last position (at the bottom) in the graphic view or to position the selected variable in the last line of the graph.

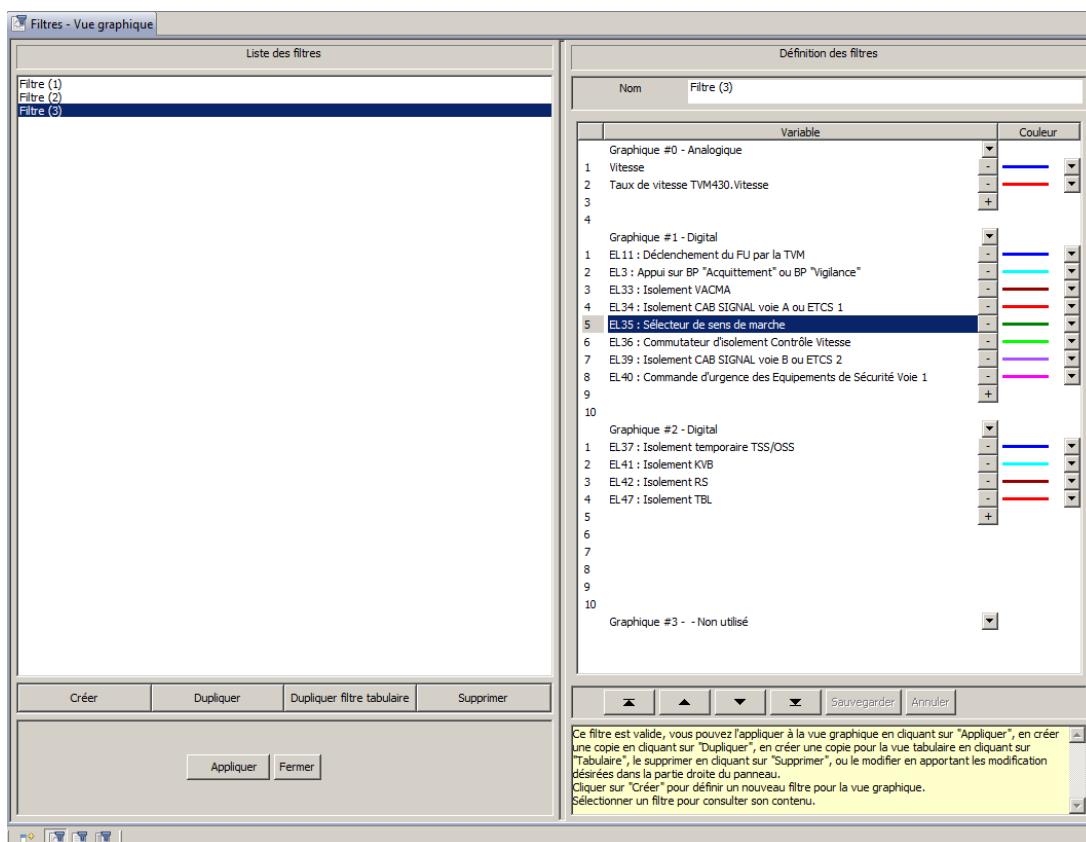


Figure 17

#### 4.12.1.2 Filters on the tabular view

To add a variable to the filter selected, click on the "+" sign, which opens a dialog box, the use of which is described in sub-section 4.12.2. A variable is deleted by clicking on the "-" sign.

In a tabular view, a filter displays only the lines containing at least one of the variables selected in the filter.

A condition on each variable can be added in order to display in the tabular view only the variables which satisfy the condition; for the operator, a combo-box offers all available operators. For the values, a decimal value is input by the user.

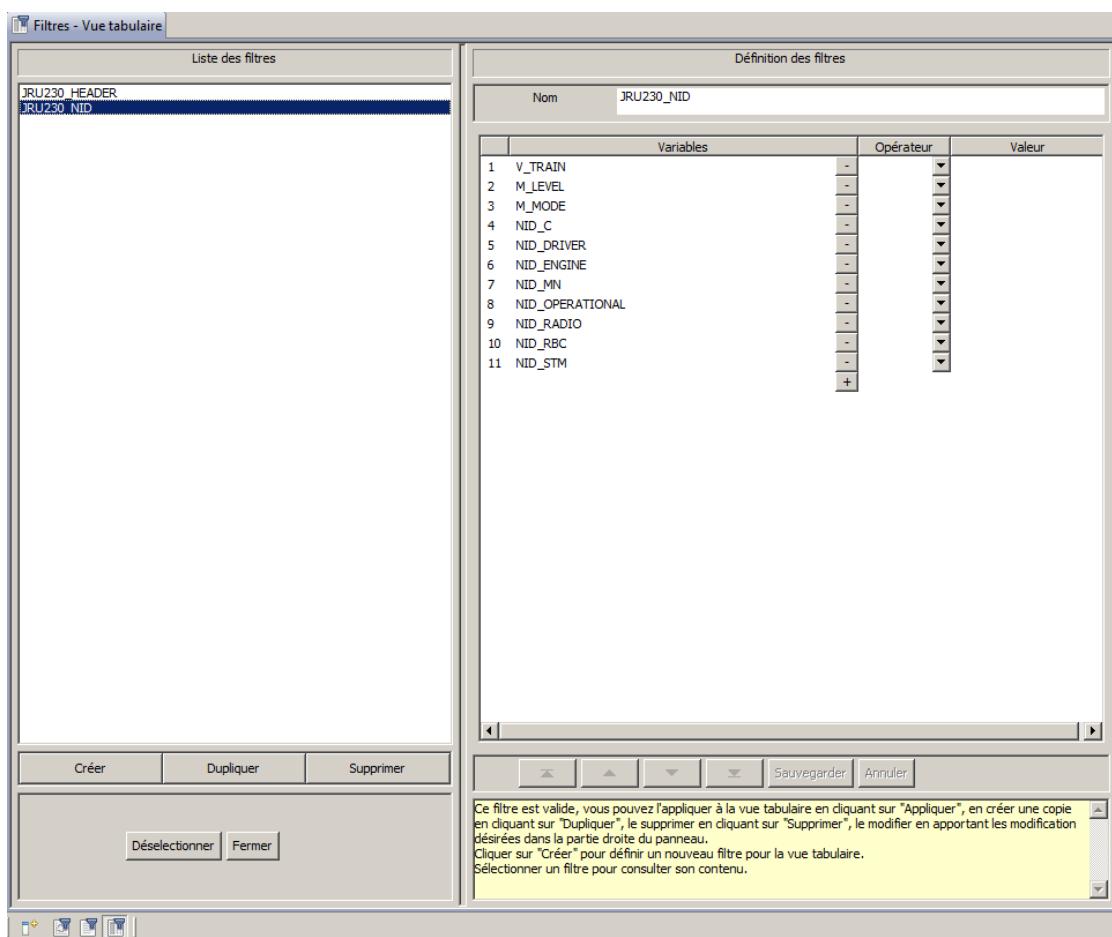


Figure 18

#### 4.12.1.3 Filters on the list view

To add an event to the filter selected, click on the "+" sign, which opens a dialog box, the use of which is described in sub-section 4.12.2. An event is deleted by clicking on the "-" sign.

Once the filter has been applied, only the rows containing events that have been selected in the filter will be displayed in the list view. The display can also be limited at column level to a given number of variables by ticking the "***Choose variables to display...***" check-box. All the variables contained in the events selected are proposed, and they can be selected or deselected using the "+" and "-" buttons.

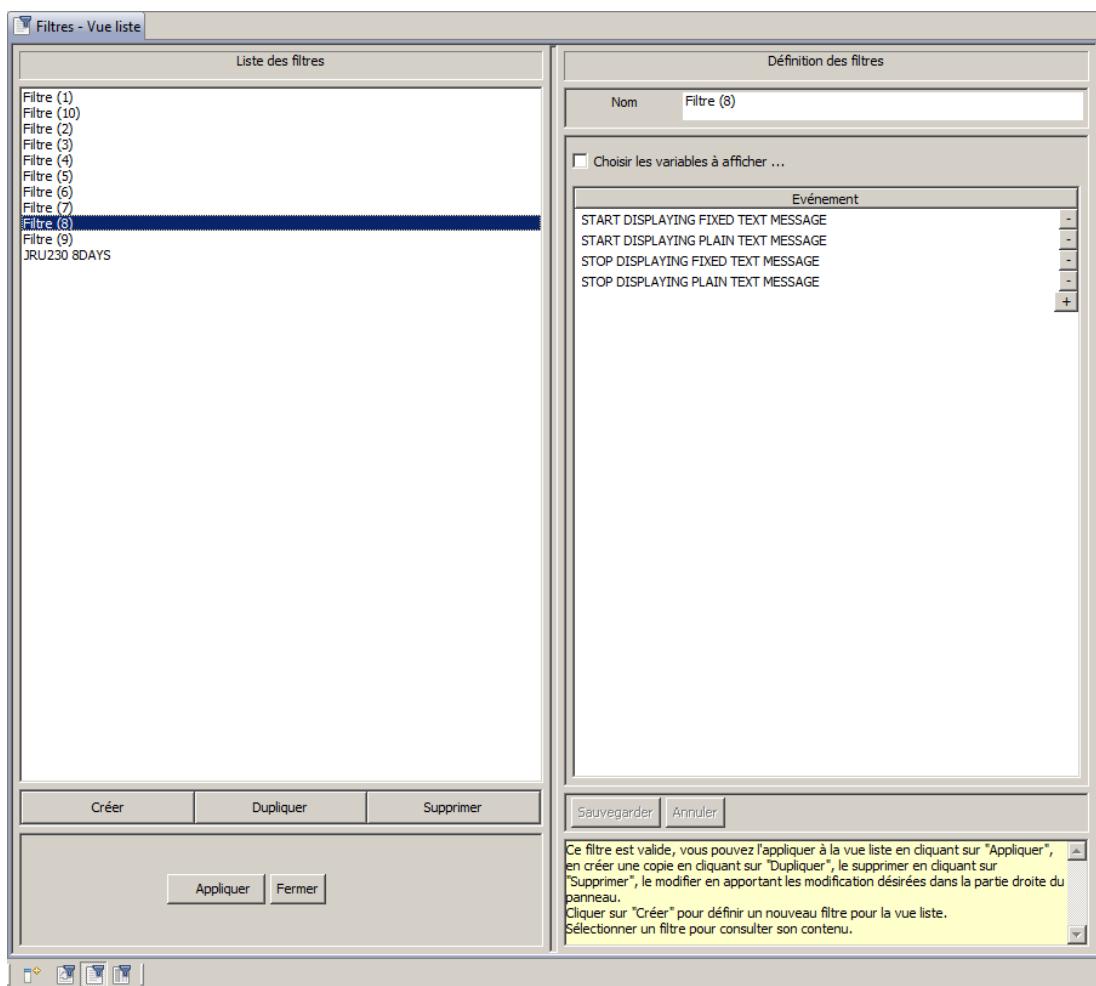


Figure 19

#### 4.12.2 Selecting variables or events of a filter

A dialog box common to the 3 types of filter is used to quickly find an event or a variable to add to the filter being created (see figure below).

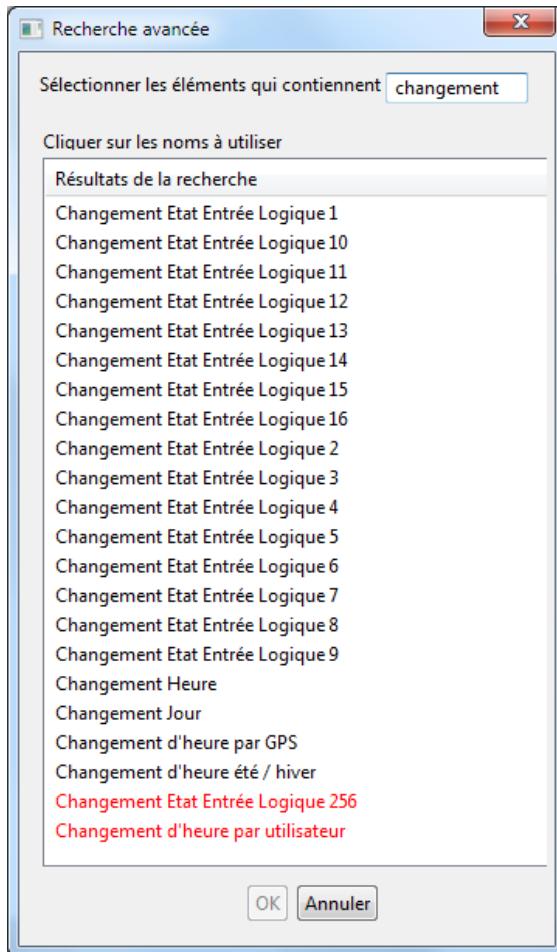


Figure 20

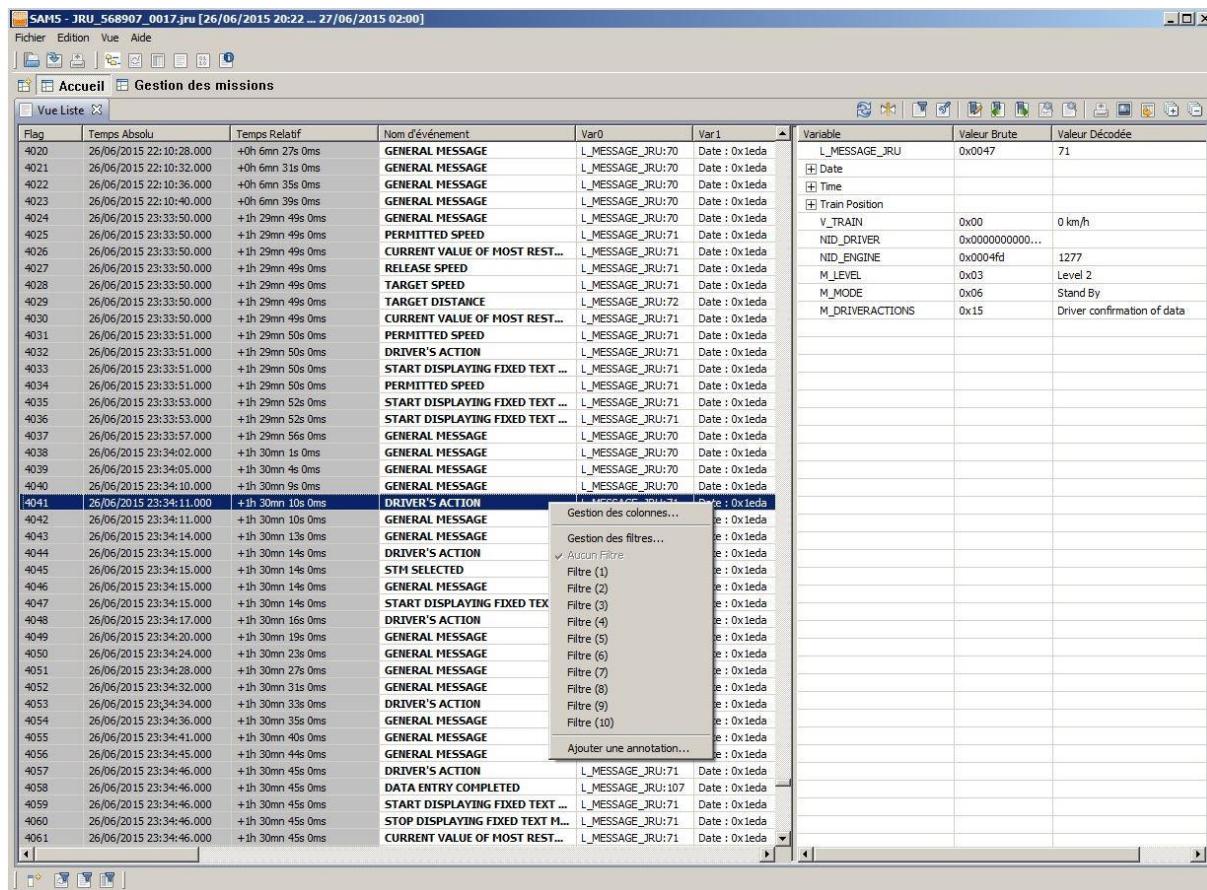
- The events or variables proposed in the list are those declared in the XML file associated with the open journey file.
- The list of variables (or events) is automatically filtered with the key word written in the “**Select variables which contain**” box.
- The variables or events in red are not included in the open file. Nevertheless, they can be selected to create a filter.
- Then the user can choose one of the variables (or events) proposed in the "Search results" list by double-clicking on its name or by selecting the desired element(s) and then clicking the “OK” button.

**Note:** When creating a filter, variables (or events) already selected in the filter will not appear in the “Advanced variable search”.

### 4.12.3 Choosing and applying a filter on a view

There are two ways to apply a filter on a view

1. open the filter manager for the view, select a filter in the list of existing filters and press the "*Apply*" button (see Figure 18)
2. for example)
3. right click in the view to open the drop-down menu and choose one of the filters recently applied (see figure below)



N.B.: The number of recent filters is limited to 10. The filter manager must be used to apply an older filter (method 1).

To deactivate a filter on a view, you must

1. Either open the filter manager for the view, select the filter applied and press the "*Deselect*" button
2. Or choose "No filter" from the right-click drop-down menu

## 4.13 Finding a criterion

### Table of possibilities to search on criteria

Table of possible searches for a view.

Criteria Views	Text	Variable	Event	Annotations
Graphic				X
List		X	X	X
Tabular		X		X
Binary				

### 4.13.1 Finding a variable

You can search for a variable on the selected view. This search is on two levels. Those two levels work like the two levels of the filter on variables.

Click the  icon in the view selected. The specified window as shown in **Figure 21** will then be displayed.

A combo-box proposes the list of variables known to SAM, and another combo-box the list of operators for the second level. For the values, a decimal value is entered by the user in the edit zone planned (see **Figure 21**).

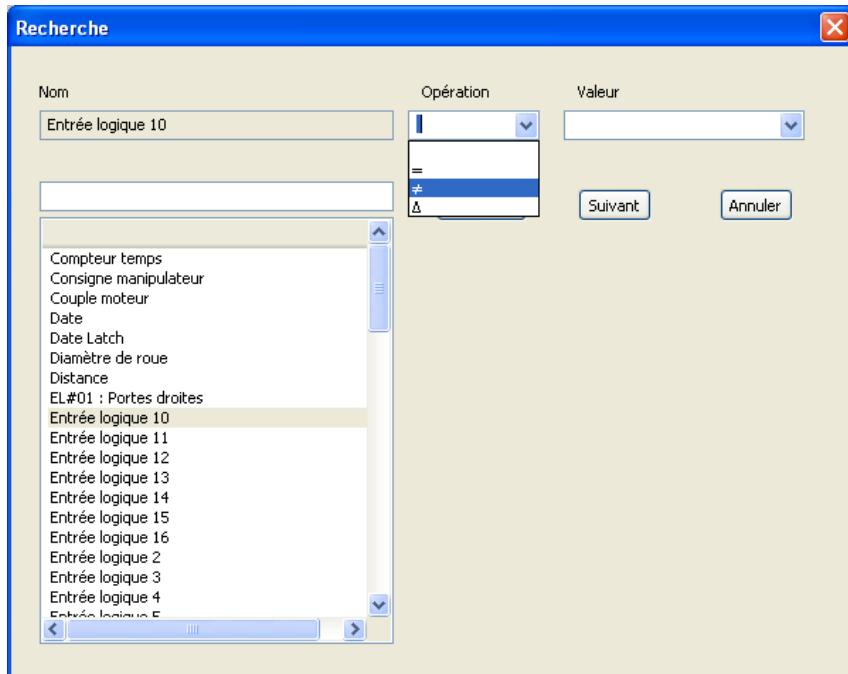


Figure 21

An advanced search of variables is available by selecting the <**Search**> element in the list. Refer to § 4.12.2 for a detailed description of this functionality.

Once you have selected the variable, click "**Next**" to go to the next occurrence of that variable, or "**Previous**" to go to the previous occurrence of that variable.

Lastly the “**Cancel**” button allows you to quit this function. (see **Figure 22**).

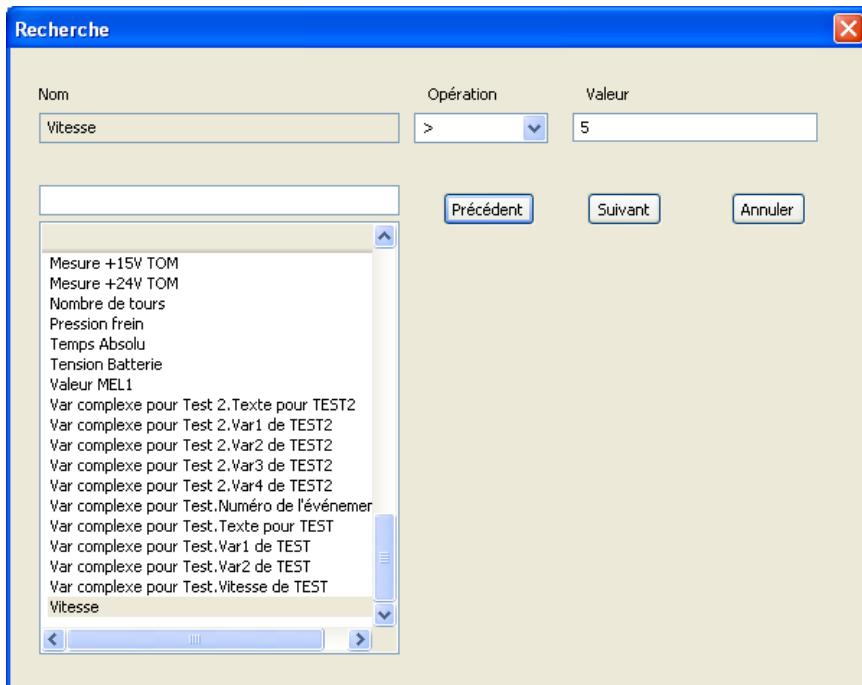


Figure 22

Information bubbles containing help for the user appear when the mouse pointer passes over the labels "Name", "Operator", "Value" of the dialog. (cf. **Figure 23** and **Figure 24**).

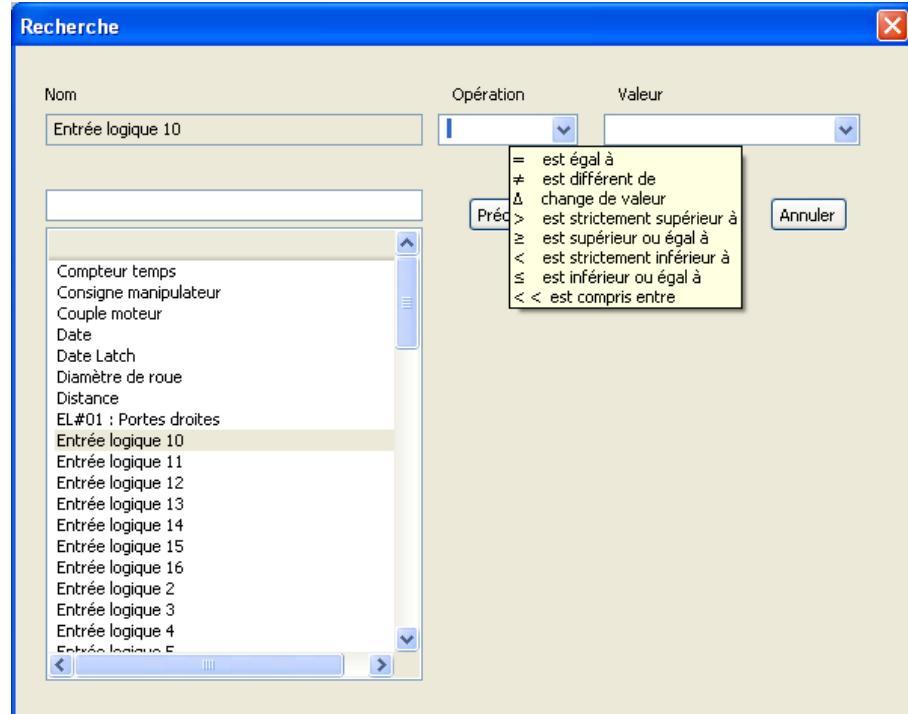


Figure 23

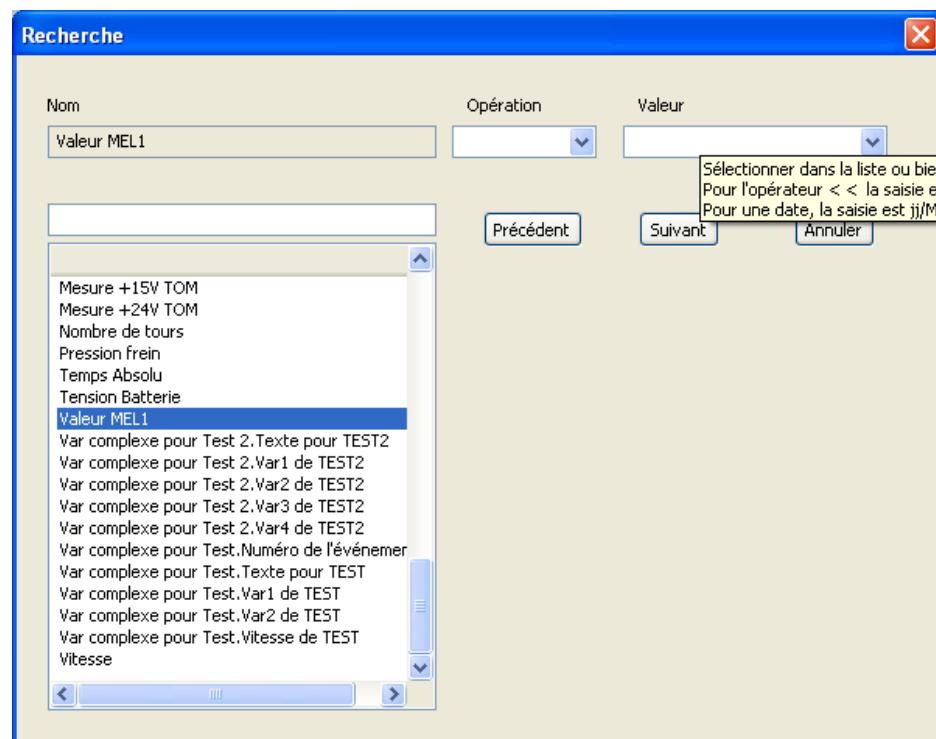


Figure 24

#### 4.13.2 Finding an event

It is possible to look for an event in the *List* view.

Click the  icon in the view. The specified window as shown in Figure 25 will then be displayed.

A combo-box proposes the list of events known to SAM (see Figure 25).

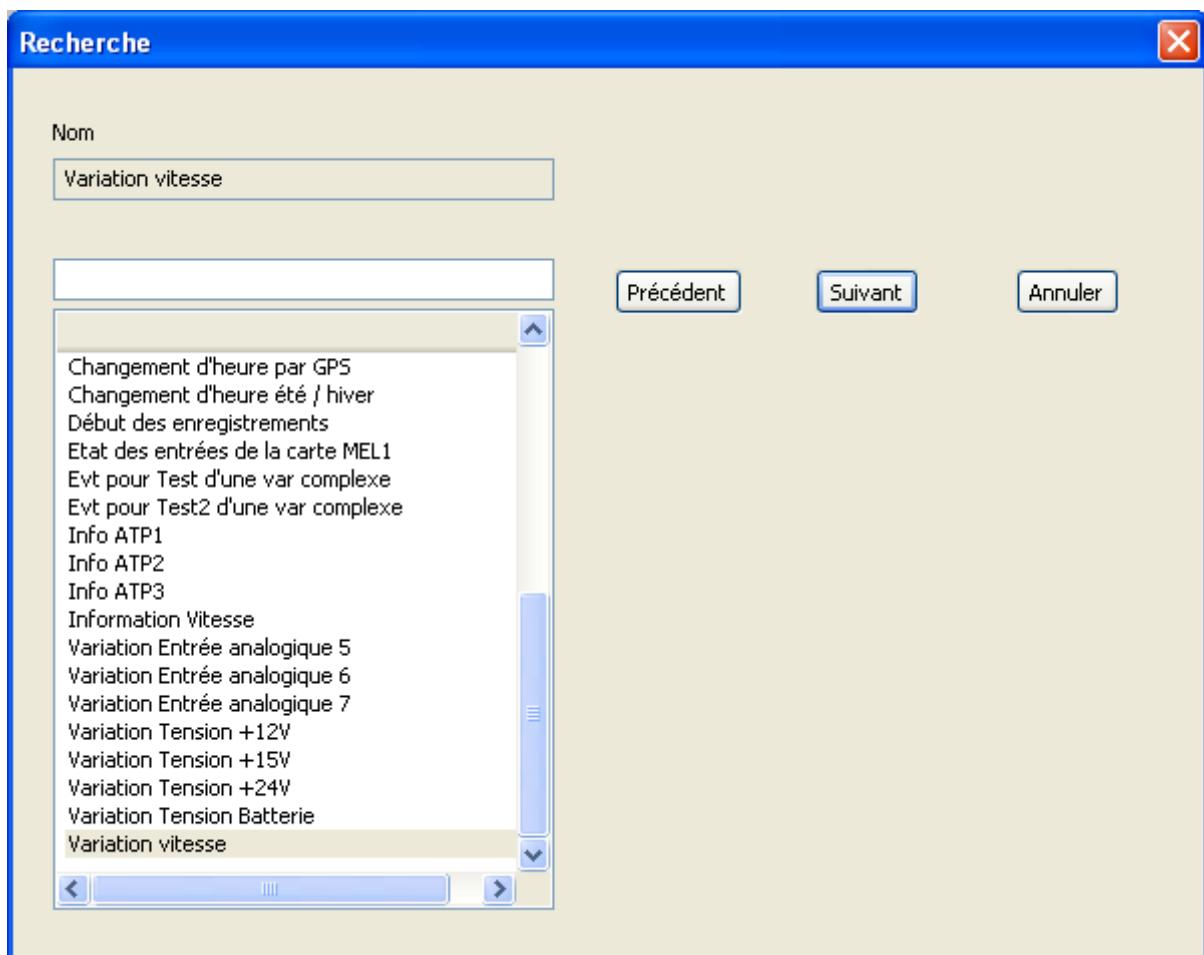


Figure 25

An advanced search of variables is available by selecting the *<Search>* element in the list. Refer to § 4.12.2 for a detailed description of this functionality.

Once you have selected the event, click on the "*Next*" button to go to the next occurrence of that event, or on "*Previous*" to go to the previous occurrence of that event.

Lastly the "*Cancel*" button allows you to quit this function.

#### 4.14 Applying correction factors to the time and to wheel diameters

These functions are independent of each other so they can therefore be used either separately or simultaneously in SAM.

#### 4.14.1 Time correction

This function is intended to correct the absolute time value displayed during the analysis of the data from the journey files. This makes it possible to advance or delay the absolute time displayed in the various SAM windows. Nevertheless, **this function does not in any way modify the data stored in the journey file, only the time calculation in SAM is impacted by the time correction.**

The "Time correction" function is accessed via the "***Edit -> Time correction***" menu. The following window is displayed:

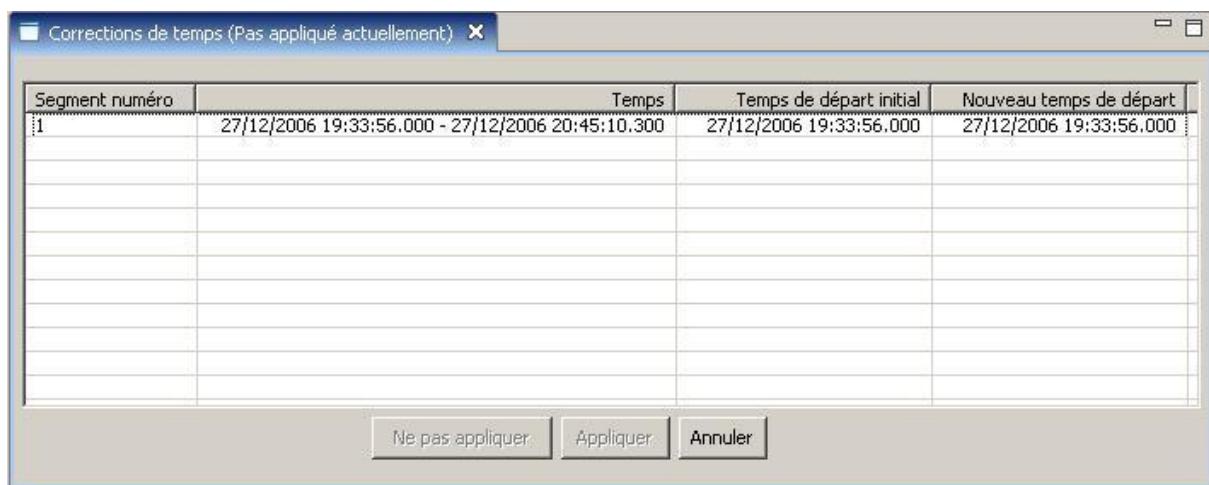


Figure 26

For every time segment in the journey time (all of the events between two "Power On" or "Time break" events), this window lets you define a new absolute time reference called the "Corrected time".

The meanings of the columns present in this window are:

- **"Segment number"**: The number of the journey file time segment.
- **"Time"**: An absolute time interval that identifies a time segment (the absolute time of the first and the last event without applying any "time correction" factor, displaying the absolute time as it is recorded in the journey file).
- **"Initial start time"**: The initial absolute time value when the first event took place in a given segment (the absolute time without applying any "time correction" factor, displaying the absolute time as it is recorded in the journey file).
- **"New start time"**: The corrected absolute time value when the first event took place in a given segment (the absolute time after applying the "time correction" factor as it will be displayed in SAM).

Only the **"New start time"** column can be modified by the user. The other columns are displayed only for the user's information (columns that cannot be modified).

After entering new corrected values, it becomes possible, using the **"Apply"** button, to apply a "time correction". In the same way, after applying the corrected values, it is possible, using the **"Do not Apply"** button, to disable the "time correction" function. After these actions are performed, all of the SAM windows are updated.

The main windows that are impacted by applying a "time correction" are:

- "List" view :

- Adding an absolute time difference in the view header (difference between the absolute time initial value and the corrected time value, relative to the time segment where the cursor is located).
- Adding the "*Corrected time*" column (shown in red).

Flag	Temps Absolu	Temps Corrigé	Temps Relatif	Distance Relative	Nom d'événement	Var0	Distance
>	27/12/2006 19:33:56,0	27/12/2006 20:33:56,0	+0h 0mn 0s 0ms	+0,000	Digital input 49 to 64 change	Time counter:202	Distance
	27/12/2006 19:33:56,1	27/12/2006 20:33:56,1	+0h 0mn 0s 100ms	+0,000	Analog input 6 threshold	A.A06 Brake cylinder :180...	Time
	27/12/2006 19:33:56,1	27/12/2006 20:33:56,1	+0h 0mn 0s 100ms	+0,000	Analog input 9 threshold	T.A01 Brake cylinder pres...	Time
	27/12/2006 19:33:56,1	27/12/2006 20:33:56,1	+0h 0mn 0s 100ms	+0,000	Digital input 193 to 208 change	Time counter:203	Distance
	27/12/2006 19:33:56,1	27/12/2006 20:33:56,1	+0h 0mn 0s 100ms	+0,000	Analog input 17 threshold	M.A01 Brake cylinder pres...	Time
	27/12/2006 19:33:56,2	27/12/2006 20:33:56,2	+0h 0mn 0s 200ms	+0,000	Digital input 177 to 192 change	Time counter:203 iter:204	Distance
	27/12/2006 19:33:56,2	27/12/2006 20:33:56,2	+0h 0mn 0s 200ms	+0,000	Analog input 9 threshold	T.A01 Brake cylinder pres...	Time
	27/12/2006 19:33:56,3	27/12/2006 20:33:56,3	+0h 0mn 0s 300ms	+0,000	Analog input 17 threshold	M.A01 Brake cylinder pres...	Time
	27/12/2006 19:33:56,3	27/12/2006 20:33:56,3	+0h 0mn 0s 300ms	+0,000	Analog input 6 threshold	A.A06 Brake cylinder :160...	Time
	27/12/2006 19:33:56,3	27/12/2006 20:33:56,3	+0h 0mn 0s 300ms	+0,000	Analog input 30 threshold	B.A06 Brake cylinder:190...	Time
	27/12/2006 19:33:56,4	27/12/2006 20:33:56,4	+0h 0mn 0s 400ms	+0,000	Digital input 17 to 32 change	Time counter:206	Distance
	27/12/2006 19:33:56,4	27/12/2006 20:33:56,4	+0h 0mn 0s 400ms	+0,000	Digital input 129 to 144 change	Time counter:206	Distance
	27/12/2006 19:33:56,4	27/12/2006 20:33:56,4	+0h 0mn 0s 400ms	+0,000	Analog input 9 threshold	T.A01 Brake cylinder pres...	Time
	27/12/2006 19:33:56,5	27/12/2006 20:33:56,5	+0h 0mn 0s 500ms	+0,000	Digital input 161 to 176 change	Time counter:207	Distance
	27/12/2006 19:33:56,5	27/12/2006 20:33:56,5	+0h 0mn 0s 500ms	+0,000	Digital input 113 to 128 change	Time counter:207	Distance
	27/12/2006 19:33:56,5	27/12/2006 20:33:56,5	+0h 0mn 0s 500ms	+0,000	Analog input 17 threshold	M.A01 Brake cylinder pres...	Time
	27/12/2006 19:33:56,5	27/12/2006 20:33:56,5	+0h 0mn 0s 500ms	+0,000	Analog input 21 threshold	M.A05 Traction motor curr...	Time
	27/12/2006 19:33:56,5	27/12/2006 20:33:56,5	+0h 0mn 0s 500ms	+0,000	Digital input 113 to 128 change	Time counter:207	Distance
	27/12/2006 19:33:56,5	27/12/2006 20:33:56,5	+0h 0mn 0s 500ms	+0,000	Analog input 6 threshold	A.A06 Brake cylinder :140...	Time
	27/12/2006 19:33:56,5	27/12/2006 20:33:56,5	+0h 0mn 0s 500ms	+0,000	Analog input 21 threshold	M.A05 Traction motor curr...	Time
	27/12/2006 19:33:56,6	27/12/2006 20:33:56,6	+0h 0mn 0s 600ms	+0,000	Analog input 9 threshold	T.A01 Brake cylinder pres...	Time
	27/12/2006 19:33:56,6	27/12/2006 20:33:56,6	+0h 0mn 0s 600ms	+0,000	Analog input 30 threshold	B.A06 Brake cylinder:170...	Time
	27/12/2006 19:33:56,6	27/12/2006 20:33:56,6	+0h 0mn 0s 600ms	+0,000	Analog input 17 threshold	M.A01 Brake cylinder pres...	Time
	27/12/2006 19:33:56,7	27/12/2006 20:33:56,7	+0h 0mn 0s 700ms	+0,000	Analog input 21 threshold	M.A05 Traction motor curr...	Time
	27/12/2006 19:33:56,7	27/12/2006 20:33:56,7	+0h 0mn 0s 700ms	+0,000	Analog input 6 threshold	A.A06 Brake cylinder :140...	Time
	27/12/2006 19:33:56,8	27/12/2006 20:33:56,8	+0h 0mn 0s 800ms	+0,000	Analog input 6 threshold	A.A06 Brake cylinder :120...	Time
	27/12/2006 19:33:56,8	27/12/2006 20:33:56,8	+0h 0mn 0s 800ms	+0,000	Analog input 9 threshold	T.A01 Brake cylinder pres...	Time
	27/12/2006 19:33:56,9	27/12/2006 20:33:56,9	+0h 0mn 0s 900ms	+0,000	Analog input 17 threshold	M.A01 Brake cylinder pres...	Time
	27/12/2006 19:33:56,9	27/12/2006 20:33:56,9	+0h 0mn 0s 900ms	+0,000	Analog input 21 threshold	M.A05 Traction motor curr...	Time
	27/12/2006 19:33:56,9	27/12/2006 20:33:56,9	+0h 0mn 0s 900ms	+0,000	Analog input 30 threshold	B.A06 Brake cylinder:150...	Time
	27/12/2006 19:33:56,9	27/12/2006 20:33:56,9	+0h 0mn 0s 900ms	+0,000	Digital input 113 to 128 change	Time counter:211	Distance
	27/12/2006 19:33:57,0	27/12/2006 20:33:57,0	+0h 0mn 1s 0ms	+0,000	Digital input 33 to 48 change	Time counter:212	Distance
	27/12/2006 19:33:57,0	27/12/2006 20:33:57,0	+0h 0mn 1s 0ms	+0,000	Digital input 177 to 192 change	Time counter:212	Distance
	27/12/2006 19:33:57,0	27/12/2006 20:33:57,0	+0h 0mn 1s 0ms	+0,000	Analog input 9 threshold	T.A01 Brake cylinder pres...	Time
	27/12/2006 19:33:57,1	27/12/2006 20:33:57,1	+0h 0mn 1s 100ms	+0,000	Analog input 17 threshold	M.A01 Brake cylinder pres...	Time
	27/12/2006 19:33:57,1	27/12/2006 20:33:57,1	+0h 0mn 1s 100ms	+0,000	Analog input 6 threshold	A.A06 Brake cylinder :100...	Time
	27/12/2006 19:33:57,2	27/12/2006 20:33:57,2	+0h 0mn 1s 200ms	+0,000	Analog input 30 threshold	B.A06 Brake cylinder:130...	Time
	27/12/2006 19:33:57,2	27/12/2006 20:33:57,2	+0h 0mn 1s 200ms	+0,000	Analog input 9 threshold	T.A01 Brake cylinder pres...	Time
	27/12/2006 19:33:57,3	27/12/2006 20:33:57,3	+0h 0mn 1s 300ms	+0,000	Analog input 17 threshold	M.A01 Brake cylinder pres...	Time
	27/12/2006 19:33:57,3	27/12/2006 20:33:57,3	+0h 0mn 1s 300ms	+0,000	Analog input 21 threshold	M.A05 Traction motor curr...	Time
	27/12/2006 19:33:57,3	27/12/2006 20:33:57,3	+0h 0mn 1s 300ms	+0,000	Digital input 33 to 48 change	Time counter:215	Distance
	27/12/2006 19:33:57,3	27/12/2006 20:33:57,3	+0h 0mn 1s 300ms	+0,000	Digital input 113 to 128 change	Time counter:215	Distance
	27/12/2006 19:33:57,4	27/12/2006 20:33:57,4	+0h 0mn 1s 400ms	+0,000	Digital input 177 to 192 change	Time counter:216	Distance
	27/12/2006 19:33:57,4	27/12/2006 20:33:57,4	+0h 0mn 1s 400ms	+0,000	Analog input 5 threshold	A.M05 Brake cylinder:100...	Time

Figure 27

- "Tabular" view :

- Adding an absolute time difference in the view header (difference between the absolute time initial value and the corrected time value, relative to the time segment where the cursor is located).
  - Adding the "**Corrected time**" column (shown in red).

Figure 28

- "Graphic" view :

- Adding an absolute time difference in the view header (difference between the absolute time initial value and the corrected time value, relative to the time segment where the cursor is located).
- Adding the "cursor - corrected time" association (the corrected absolute time value relative to the cursor's position in the view).
- Adding the "***Corrected time***" line (an additional line in addition to the ones that already exist when no "time correction" is applied).

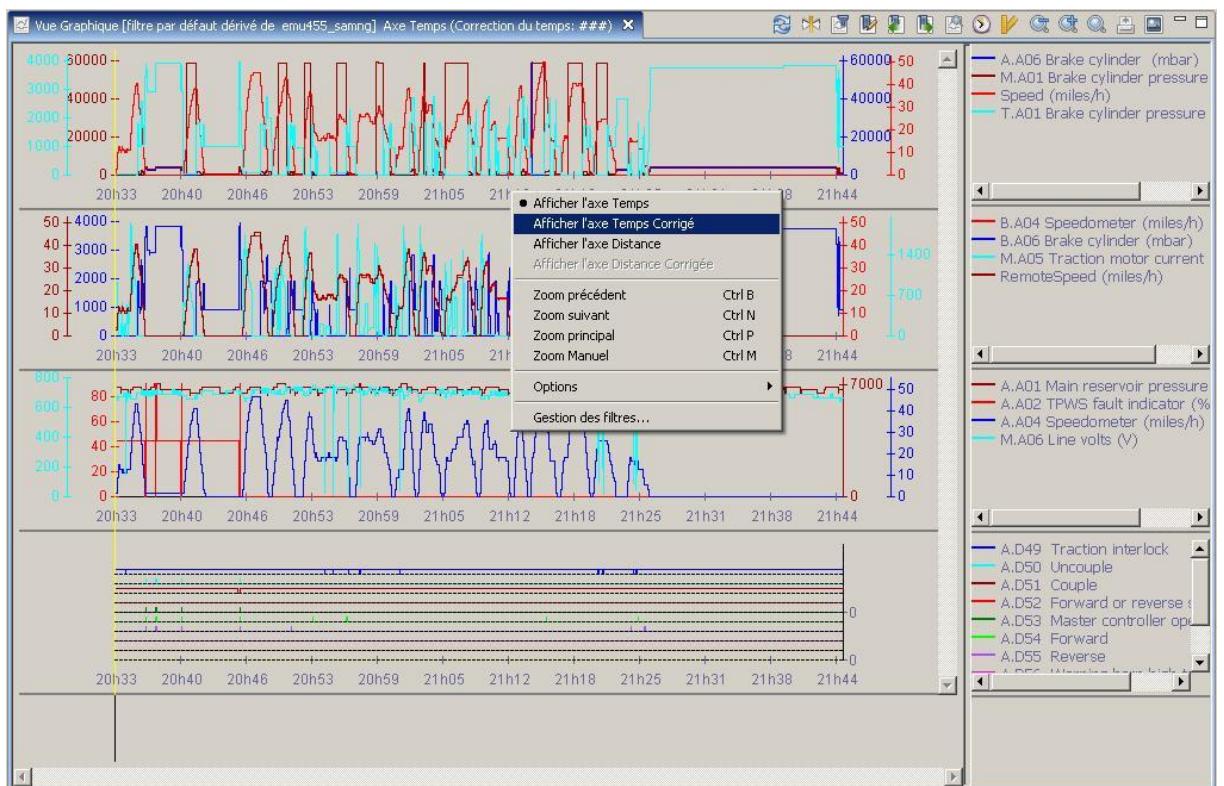
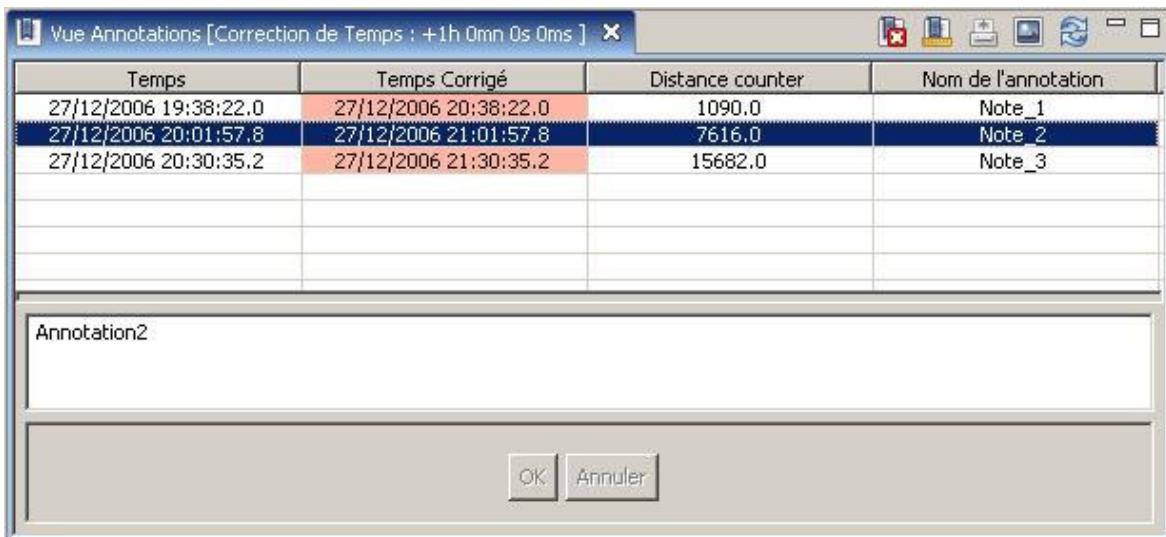


Figure 29

- "Annotations list" window:

- Adding an absolute time difference in the window header (difference between the absolute time initial value and the corrected time value, relative to the time segment where the cursor is located).
- Adding the "*Corrected time*" column (shown in red).



The screenshot shows a Windows application window titled "Vue Annotations [Correction de Temps : +1h 0mn 0s 0ms]". The main area is a table with four columns: "Temps", "Temps Corrigé", "Distance counter", and "Nom de l'annotation". The first row shows the initial values. The second row has the "Temps Corrigé" column highlighted in red. The third row also has the "Temps Corrigé" column highlighted in red. The fourth row shows the final values. Below the table, there is a text input field containing "Annotation2" and a button bar with "OK" and "Annuler" buttons.

Temps	Temps Corrigé	Distance counter	Nom de l'annotation
27/12/2006 19:38:22,0	27/12/2006 20:38:22,0	1090,0	Note_1
27/12/2006 20:01:57,8	27/12/2006 21:01:57,8	7616,0	Note_2
27/12/2006 20:30:35,2	27/12/2006 21:30:35,2	15682,0	Note_3

Figure 30

- "Journey information" window :

This window is also impacted by the application of a "time correction", but less so (adding information such as the start of record corrected time, the end of record corrected time, etc.).

The functions assigned to these windows are not impacted by applying a "time correction" and they therefore retain exactly the same mechanisms. As a result, it is always possible to create virtual variables, to filter views, run searches or even export files. For further information, refer to the relevant sub-sections in this manual.

As for the operating mode used to save time corrected values, refer to sub-section "4.15.4 - Saving user remarks".

Note:

All of the cells where the value is not defined (value that cannot be calculated or that is not present in the journey file), will be replaced by a "####" symbol.

#### 4.14.2 Wheel diameter correction

This function is intended to correct the wheel diameter value used when calculating the corrected distance and the corrected speed. As the wheel diameter value is taken from the journey file, consequently this function is only available in SAM if the journey file contains the wheel diameter information. If this information is present in the journey file then it is possible to reduce or increase the wheel diameter via the "Wheel diameter correction" function and therefore to influence the corrected distance and corrected speed values displayed in the various SAM program windows. Nevertheless, **this function does not in any way modify the data stored in the journey file, only the corrected distance and corrected speed calculation in SAM is impacted by the wheel diameter correction.**

The "Wheel diameter correction" function is accessed via the "**Edit -> Wheel diameter correction**" menu. The following window is displayed:

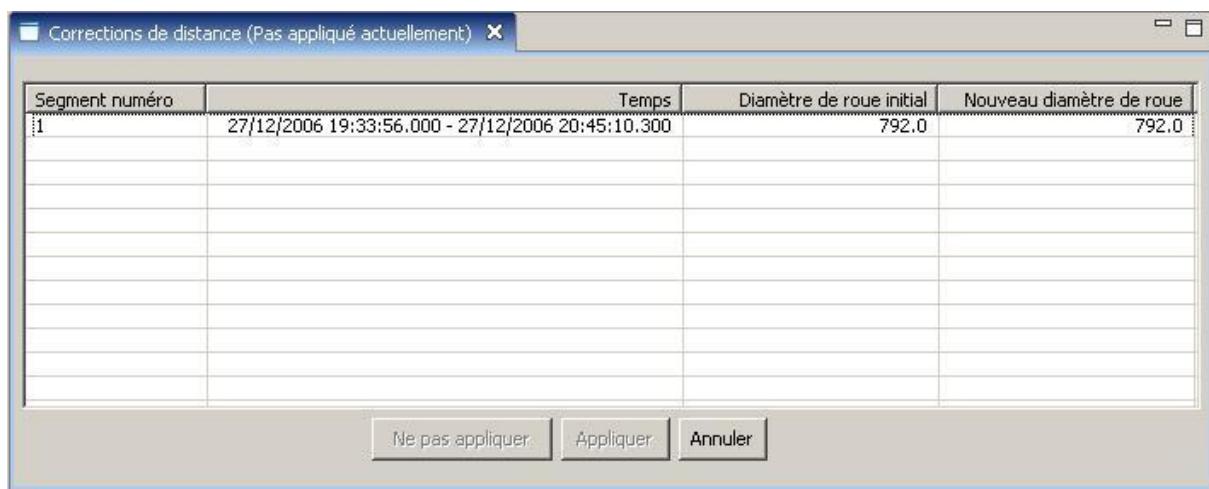


Figure 31

For every time wheel diameter segment in the journey (all of the events between two "Power On" events), this window lets you define new distance and speed references called the "Corrected distance" and "Corrected speed".

The meanings of the columns present in this window are:

- **"Segment number"**: The number of the journey file time segment.
- **"Time"**: An absolute time interval that identifies a wheel diameter segment (the absolute time of the first and the last event without applying any "time correction" factor, displaying the absolute time as it is recorded in the journey file).
- **"Initial wheel diameter"**: The initial wheel diameter value for the segment (the wheel diameter value as recorded in the journey file).
- **"New wheel diameter"**: The corrected wheel diameter value for the segment (the wheel diameter value after applying the "wheel diameter correction", as used in the corrected distance and corrected speed calculations).

Only the **"New wheel diameter"** column can be modified by the user. The other columns are displayed only for the user's information (columns that cannot be modified).

After entering new corrected values, it becomes possible, using the **"Apply"** button, to apply a "wheel diameter correction". In the same way, after applying the corrected values, it is possible, using the **"Do not Apply"** button, to disable the "wheel diameter correction" function. After these actions are performed, all of the SAM windows are updated.

The main windows that are impacted by applying a "Wheel diameter correction" are:

- "List" view:

- Adding the wheel diameter difference in the view header (difference between the initial and the corrected wheel diameter value, relative to the wheel diameter segment where the cursor is located).
- Adding the "*Corrected distance*" column (shown in red).

Flag	Temps Absolu	Temps Relatif	Distance Relative	Distance Relative Corrigée	Nom d'événement	Var0
A	27/12/2006 20:30:35.2	+0h 56mn 39s 200...	+15539.000	+15695.960	Analog input 1 threshold	A.A01 Main reservoir pres...
	27/12/2006 20:30:35.3	+0h 56mn 39s 300...	+15539.000	+15695.960	Analog input 1 threshold	A.A01 Main reservoir pres...
	27/12/2006 20:30:35.8	+0h 56mn 39s 800...	+15539.000	+15695.960	Time threshold 1	Distance counter:682
	27/12/2006 20:30:51.1	+0h 56mn 55s 100...	+15539.000	+15695.960	Analog input 25 threshold	B.A01 Main reservoir pres...
	27/12/2006 20:30:51.2	+0h 56mn 55s 200...	+15539.000	+15695.960	Analog input 25 threshold	B.A01 Main reservoir pres...
	27/12/2006 20:31:09.5	+0h 57mn 13s 500...	+15539.000	+15695.960	Analog input 25 threshold	M.A06 Line volts:758 V
	27/12/2006 20:31:10.5	+0h 57mn 14s 500...	+15539.000	+15695.960	Analog input 25 threshold	M.A06 Line volts:732 V
	27/12/2006 20:31:13.1	+0h 57mn 17s 100...	+15539.000	+15695.960	Digital input 33 to 48 change	Time counter:373
	27/12/2006 20:31:13.2	+0h 57mn 17s 200...	+15539.000	+15695.960	Digital input 177 to 192 change	Time counter:374
	27/12/2006 20:31:24.6	+0h 57mn 28s 600...	+15539.000	+15695.960	Analog input 22 threshold	M.A06 Line volts:706 V
	27/12/2006 20:31:25.4	+0h 57mn 29s 400...	+15539.000	+15695.960	Analog input 22 threshold	M.A06 Line volts:733 V
	27/12/2006 20:31:26.3	+0h 57mn 30s 300...	+15539.000	+15695.960	Analog input 1 threshold	A.A01 Main reservoir pres...
	27/12/2006 20:31:28.4	+0h 57mn 32s 400...	+15539.000	+15695.960	Analog input 1 threshold	B.A01 Main reservoir pres...
	27/12/2006 20:31:35.8	+0h 57mn 39s 800...	+15539.000	+15695.960	Analog input 25 threshold	A.A01 Main reservoir pres...
	27/12/2006 20:31:36.0	+0h 57mn 40s 0ms	+15539.000	+15695.960	Time threshold 1	Distance counter:682
	27/12/2006 20:31:37.4	+0h 57mn 41s 400...	+15539.000	+15695.960	Analog input 1 threshold	A.A01 Main reservoir pres...
	27/12/2006 20:31:48.5	+0h 57mn 52s 500...	+15539.000	+15695.960	Analog input 25 threshold	B.A01 Main reservoir pres...
	27/12/2006 20:31:48.5	+0h 57mn 52s 500...	+15539.000	+15695.960	Digital input 33 to 48 change	Time counter:127
	27/12/2006 20:32:35.8	+0h 58mn 39s 800...	+15539.000	+15695.960	Digital input 177 to 192 change	Time counter:127
	27/12/2006 20:33:30.8	+0h 59mn 34s 800...	+15539.000	+15695.960	Time threshold 1	Distance counter:682
	27/12/2006 20:33:32.6	+0h 59mn 36s 600...	+15539.000	+15695.960	Analog input 1 threshold	A.A01 Main reservoir pres...
	27/12/2006 20:33:32.6	+0h 59mn 36s 600...	+15539.000	+15695.960	Analog input 25 threshold	B.A01 Main reservoir pres...
	27/12/2006 20:33:35.8	+0h 59mn 39s 800...	+15539.000	+15695.960	Analog input 25 threshold	A.A01 Main reservoir pres...
	27/12/2006 20:33:44.8	+0h 59mn 48s 800...	+15539.000	+15695.960	Time threshold 1	Distance counter:682
	27/12/2006 20:33:45.4	+0h 59mn 49s 400...	+15539.000	+15695.960	Digital input 65 to 80 change	Time counter:90
	27/12/2006 20:33:47.9	+0h 59mn 51s 900...	+15539.000	+15695.960	Digital input 65 to 80 change	Time counter:96
	27/12/2006 20:34:27.5	+1h 0mn 31s 500ms	+15539.000	+15695.960	Digital input 65 to 80 change	Time counter:121
	27/12/2006 20:34:28.8	+1h 0mn 32s 800ms	+15539.000	+15695.960	Digital input 81 to 96 change	Time counter:517
	27/12/2006 20:34:30.4	+1h 0mn 34s 400ms	+15539.000	+15695.960	Digital input 81 to 96 change	Time counter:530
	27/12/2006 20:34:35.8	+1h 0mn 39s 800ms	+15539.000	+15695.960	Digital input 81 to 96 change	Time counter:546
	27/12/2006 20:34:45.2	+1h 0mn 49s 200ms	+15539.000	+15695.960	Time threshold 1	Distance counter:682
	27/12/2006 20:34:45.3	+1h 0mn 49s 300ms	+15539.000	+15695.960	Analog input 25 threshold	B.A01 Main reservoir pres...
	27/12/2006 20:35:07.7	+1h 1mn 11s 700ms	+15539.000	+15695.960	Analog input 25 threshold	B.A01 Main reservoir pres...
	27/12/2006 20:35:07.7	+1h 1mn 11s 700ms	+15539.000	+15695.960	Digital input 33 to 48 change	Time counter:319
	27/12/2006 20:35:12.6	+1h 1mn 25s 600ms	+15539.000	+15695.960	Digital input 177 to 192 change	Time counter:319
	27/12/2006 20:35:23.6	+1h 1mn 27s 600ms	+15539.000	+15695.960	Analog input 1 threshold	A.A01 Main reservoir pres...
	27/12/2006 20:35:32.7	+1h 1mn 36s 700ms	+15539.000	+15695.960	Analog input 25 threshold	B.A01 Main reservoir pres...
	27/12/2006 20:35:34.4	+1h 1mn 38s 400ms	+15539.000	+15695.960	Analog input 1 threshold	A.A01 Main reservoir pres...
	27/12/2006 20:35:38.8	+1h 1mn 39s 800ms	+15539.000	+15695.960	Analog input 25 threshold	B.A01 Main reservoir pres...
	27/12/2006 20:35:42.6	+1h 1mn 46s 600ms	+15539.000	+15695.960	Digital input 33 to 48 change	Time counter:68
	27/12/2006 20:35:42.6	+1h 1mn 46s 600ms	+15539.000	+15695.960	Digital input 177 to 192 change	Time counter:68
	27/12/2006 20:35:51.0	+1h 1mn 55s 0ms	+15539.000	+15695.960	Digital input 65 to 80 change	Time counter:152
	27/12/2006 20:35:51.0	+1h 1mn 55s 0ms	+15539.000	+15695.960	Digital input 65 to 80 change	Time counter:152

Figure 32

- "Tabular" view :

- Adding the wheel diameter difference in the view header (difference between the initial and the corrected wheel diameter value, relative to the wheel diameter segment where the cursor is located).
- Adding the "*Corrected distance*" column (shown in red).
- Adding the "*Corrected speed*" column (shown in red).

Flag	Temps Absolu	Temps Relatif	Distance R...	Distance Relative Corrigée (km)	Vitesse (km/h)	Vitesse Corrigée (km/h)	Entrée logique 2	Entrée logique 3
16/01/2008 08:25:10.900		###	###	###	257.4	351.0	faux	faux
16/01/2008 08:27:11.000		###	###	###	258.5	352.5	faux	faux
16/01/2008 08:27:12.000		###	###	###	258.5	352.5	faux	faux
16/01/2008 08:29:12.100		###	###	###	259.6	354.0	Faux	Faux
16/01/2008 08:29:13.100		###	###	###	259.6	354.0	faux	faux
16/01/2008 08:31:13.200		###	###	###	260.7	355.5	faux	Faux
16/01/2008 08:31:14.200		###	###	###	260.7	355.5	faux	faux
16/01/2008 08:33:14.300		###	###	###	261.8	357.0	faux	faux
16/01/2008 08:33:15.300		###	###	###	261.8	357.0	faux	faux
16/01/2008 08:35:15.400		###	###	###	262.9	358.5	faux	Faux
16/01/2008 08:35:16.400		###	###	###	262.9	358.5	faux	faux
16/01/2008 08:37:16.500		###	###	###	264	360.0	faux	faux
16/01/2008 08:37:17.500		###	###	###	264	360.0	faux	faux
16/01/2008 08:02:00.100	+0h 0mn 0s 100ms	+0.002		+0.003	265.1	361.5	faux	faux
16/01/2008 08:02:01.100	+0h 0mn 1s 100ms	+0.015		+0.020	265.1	361.5	faux	faux
16/01/2008 08:04:01.200	+0h 2mn 1s 200ms	+0.018		+0.025	266.2	363.0	Faux	Faux
16/01/2008 08:04:02.200	+0h 2mn 2s 200ms	+0.031		+0.042	266.2	363.0	faux	faux
16/01/2008 08:06:02.300	+0h 4mn 2s 300ms	+0.034		+0.046	267.3	364.5	faux	faux
16/01/2008 08:06:03.300	+0h 4mn 3s 300ms	+0.047		+0.064	267.3	364.5	faux	faux
16/01/2008 08:06:03.300	+0h 6mn 3s 300ms	+0.049		+0.067	267.3	364.5	VRAI	Faux
16/01/2008 08:08:03.400	+0h 6mn 3s 400ms	+0.050		+0.068	268.4	366.0	VRAI	Faux
16/01/2008 08:08:04.400	+0h 6mn 4s 400ms	+0.063		+0.086	268.4	366.0	VRAI	faux
16/01/2008 08:10:04.400	+0h 8mn 4s 400ms	+0.064		+0.087	268.4	366.0	faux	Faux
16/01/2008 08:10:04.400	+0h 8mn 4s 400ms	+0.065		+0.089	268.4	366.0	faux	VRAI
16/01/2008 08:10:04.500	+0h 8mn 4s 500ms	+0.066		+0.090	269.5	367.5	faux	VRAI
16/01/2008 08:10:05.500	+0h 8mn 5s 500ms	+0.079		+0.108	269.5	367.5	faux	VRAI
16/01/2008 08:12:05.500	+0h 10mn 5s 500...	+0.080		+0.109	269.5	367.5	faux	faux
16/01/2008 08:12:05.500	+0h 10mn 5s 500...	+0.081		+0.110	269.5	367.5	Faux	Faux
16/01/2008 08:12:05.600	+0h 10mn 5s 600...	+0.082		+0.112	270.6	369.0	faux	faux
16/01/2008 08:12:06.600	+0h 10mn 6s 600...	+0.095		+0.130	270.6	369.0	faux	faux
16/01/2008 08:14:06.600	+0h 12mn 6s 600...	+0.096		+0.131	270.6	369.0	Faux	Faux
16/01/2008 08:14:06.700	+0h 12mn 6s 700...	+0.098		+0.134	271.7	370.5	faux	Faux
16/01/2008 08:14:07.700	+0h 12mn 7s 700...	+0.111		+0.151	271.7	370.5	faux	faux
16/01/2008 08:16:07.800	+0h 14mn 7s 800...	+0.114		+0.155	272.8	372.0	faux	Faux
16/01/2008 08:16:08.800	+0h 14mn 8s 800...	+0.127		+0.173	272.8	372.0	faux	faux
16/01/2008 08:18:08.900	+0h 16mn 8s 900...	+0.130		+0.177	273.9	373.5	faux	Faux
16/01/2008 08:18:09.900	+0h 16mn 9s 900...	+0.143		+0.195	273.9	373.5	faux	faux
16/01/2008 08:20:10.000	+0h 18mn 10s 0ms	+0.146		+0.199	275	375.0	Faux	Faux
16/01/2008 08:20:11.000	+0h 18mn 11s 0ms	+0.159		+0.217	275	375.0	faux	faux
16/01/2008 08:22:11.100	+0h 20mn 11s 100...	+0.162		+0.221	276.1	376.5	faux	Faux
16/01/2008 08:22:12.100	+0h 20mn 12s 100...	+0.175		+0.239	276.1	376.5	faux	faux
16/01/2008 08:24:12.200	+0h 22mn 12s 200...	+0.178		+0.243	277.2	378.0	faux	Faux
16/01/2008 08:24:12.200	+0h 22mn 12s 200...	+0.178		+0.250	277.2	378.0	faux	faux

Figure 33

- "Graphic" view :

- Adding the wheel diameter difference in the view header (difference between the initial and the corrected wheel diameter value, relative to the wheel diameter segment where the cursor is located).
- Adding the "*Corrected speed*" trend.
- Adding the "cursor – corrected distance" association (the corrected distance value relative to the cursor's position in the view).
- Adding the "*Corrected distance*" line (an additional line in addition to the ones that already exist when no "wheel diameter correction" is applied).
- Adding the "*Display distance breaks*" that define those portions of the journey file comprising different wheel diameters. This option is selected when the box at the bottom of the window is checked (the distance breaks will be shown by vertical bars).

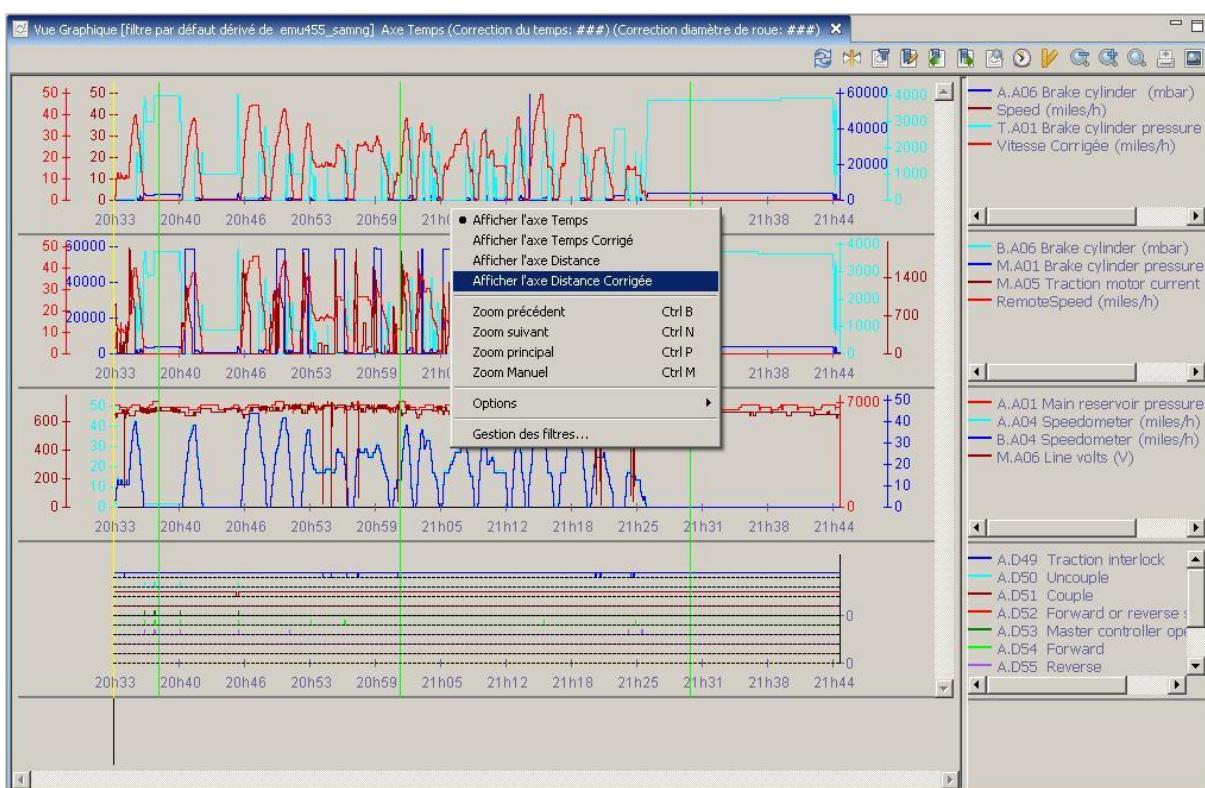
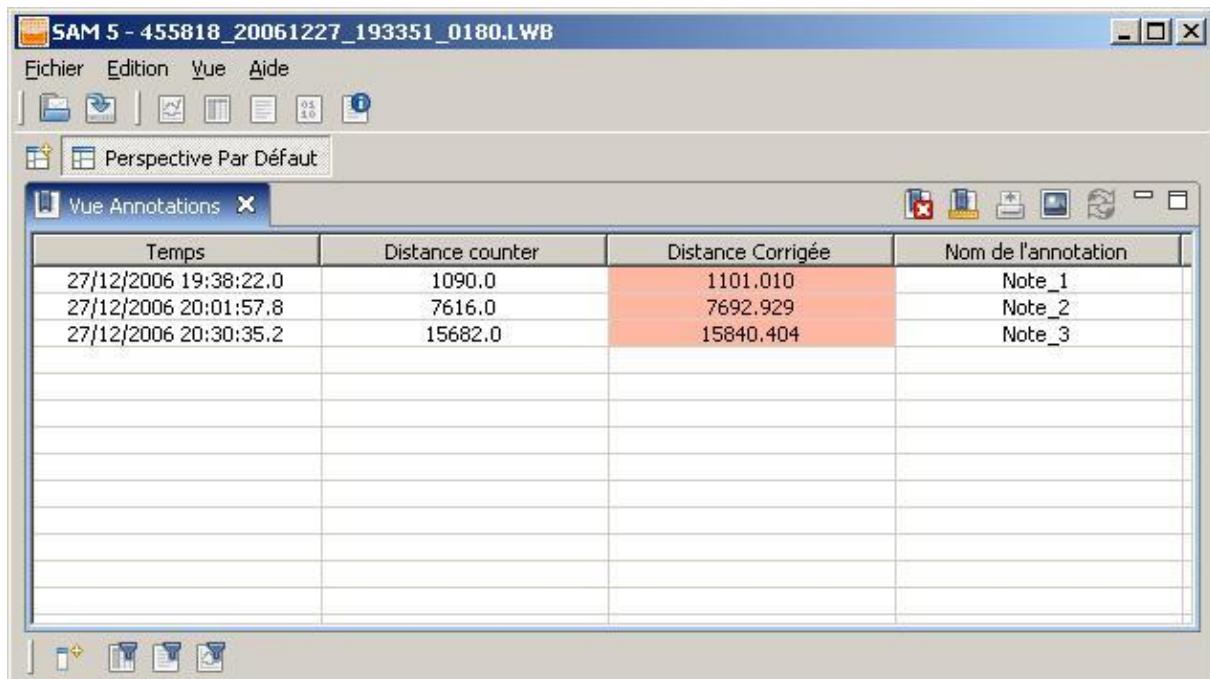


Figure 34

- “Annotations” window:

- Adding the wheel diameter difference in the view header (difference between the initial and the corrected wheel diameter value, relative to the wheel diameter segment where the cursor is located).
- Adding the "*Corrected distance*" column (shown in red).



Temps	Distance counter	Distance Corrigée	Nom de l'annotation
27/12/2006 19:38:22,0	1090.0	1101.010	Note_1
27/12/2006 20:01:57,8	7616.0	7692.929	Note_2
27/12/2006 20:30:35,2	15682.0	15840.404	Note_3

Figure 35

- "Journey information" and "Markers" window :

These windows are also impacted by the application of a "wheel diameter correction", but less so (adding information such as the corrected distance, the corrected speed, etc.).

The functions assigned to these windows are not impacted by applying a "Wheel diameter correction" and they therefore retain exactly the same mechanisms. As a result, it is always possible to create virtual variables, to filter views, run searches or even export files. The corrected speed information is furthermore available in these functions when a "wheel diameter correction" is applied. For further information, refer to the relevant sub-sections in this manual.

As for the operating mode used to save wheel diameter corrected values, refer to sub-section "4.15.4 - Saving user remarks".

Note:

All of the cells where the value is not defined (value that cannot be calculated or that is not present in the journey file), will be replaced by a "####" symbol.

## 4.15 Using tools associated with journey file analysis

### 4.15.1 Change of origin

To make relative reading easier between two points, it is possible to change the origin of the time and the distances.

To change the origin, position the cursor on one of the views (Tabular, List, Graphic), then click the  icon (reference point) in the view.

A new dialog of the Pop-Up type appears with an entry box to modify the value of the relative distance to the "Reference Point". By default the value zero is displayed in this box, cf. **Figure 36**.

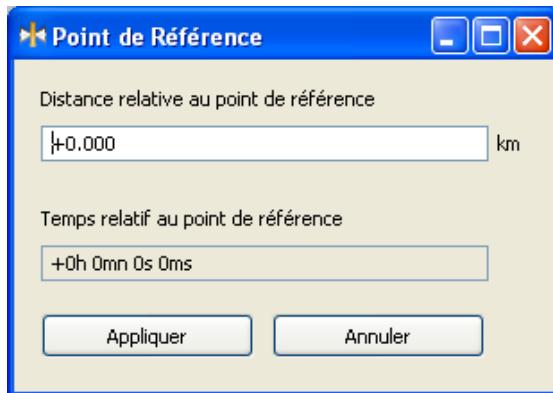


Figure 36

The value entered in the box can be zero, positive or negative, and is used as a reference point for calculating the relative distance values (Relative Distance column). The reference value of the relative time is always 0h0min0s.

The button "Apply" closes the entry window and starts the calculation of the relative values, for all the views concerned, simultaneously for the relative time and the relative distance (Relative Time and Relative Distance columns of the Table and List views). A "Cancel" button closes the window without starting the calculation of the relative values.

The position that corresponds to the reference point is then shown, highlighted in yellow, in the various views (see Figure 37).

To return to the previous setting, place the cursor on the first element (preferably on a view or tabular list) and reposition the origin.

Note:

By default, when a view is opened, the reference point is set on the first "PowerOn" event in the journey file. In cases where no "PowerOn" event is present, the reference zero is set on the first event in the file.

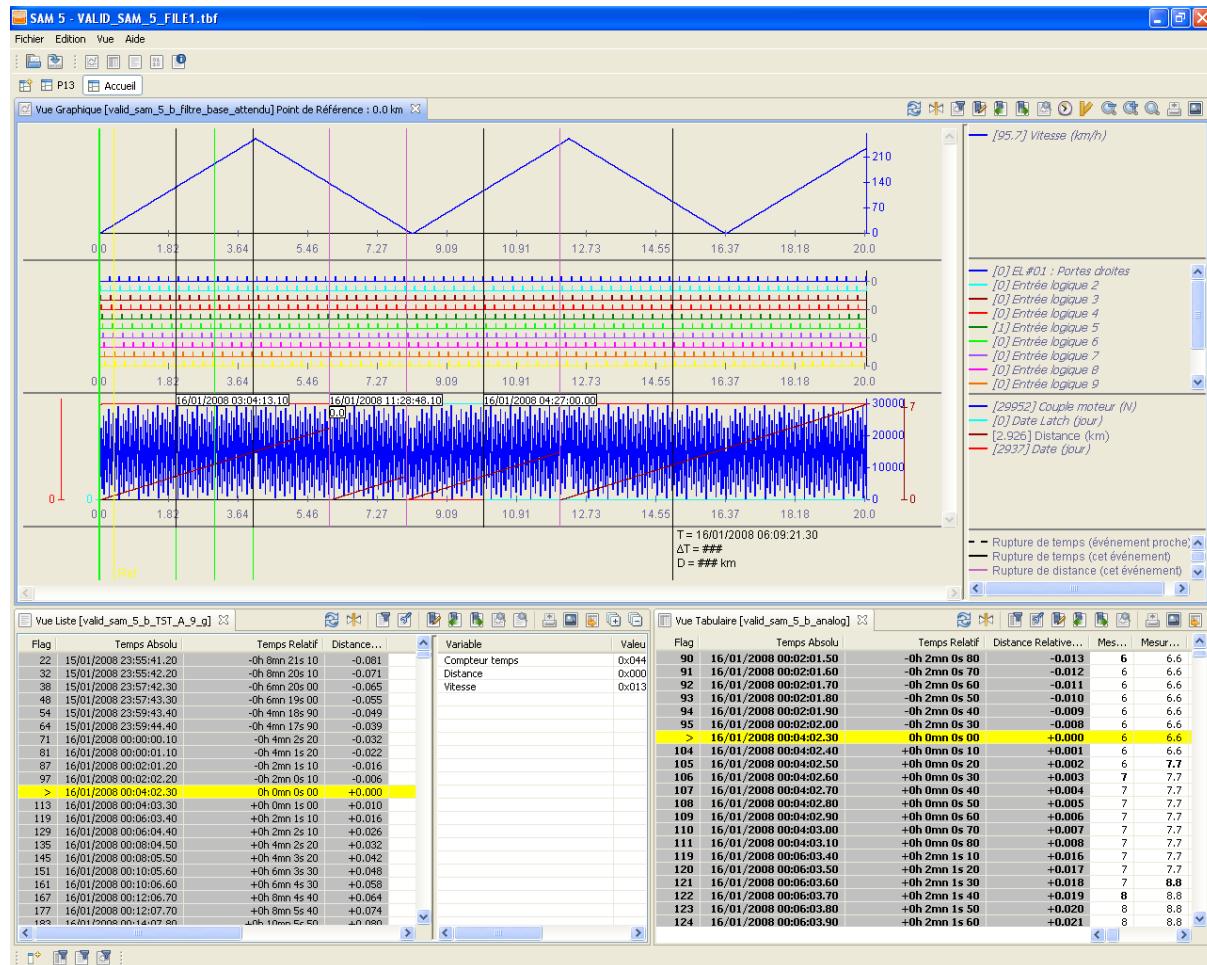


Figure 37

## 4.15.2 Multiple search

The SAM software supports searches for a particular criterion in all the files present in a tree on a disk.

Select the "*Edition -> Search in files...*" menu to display the following window.

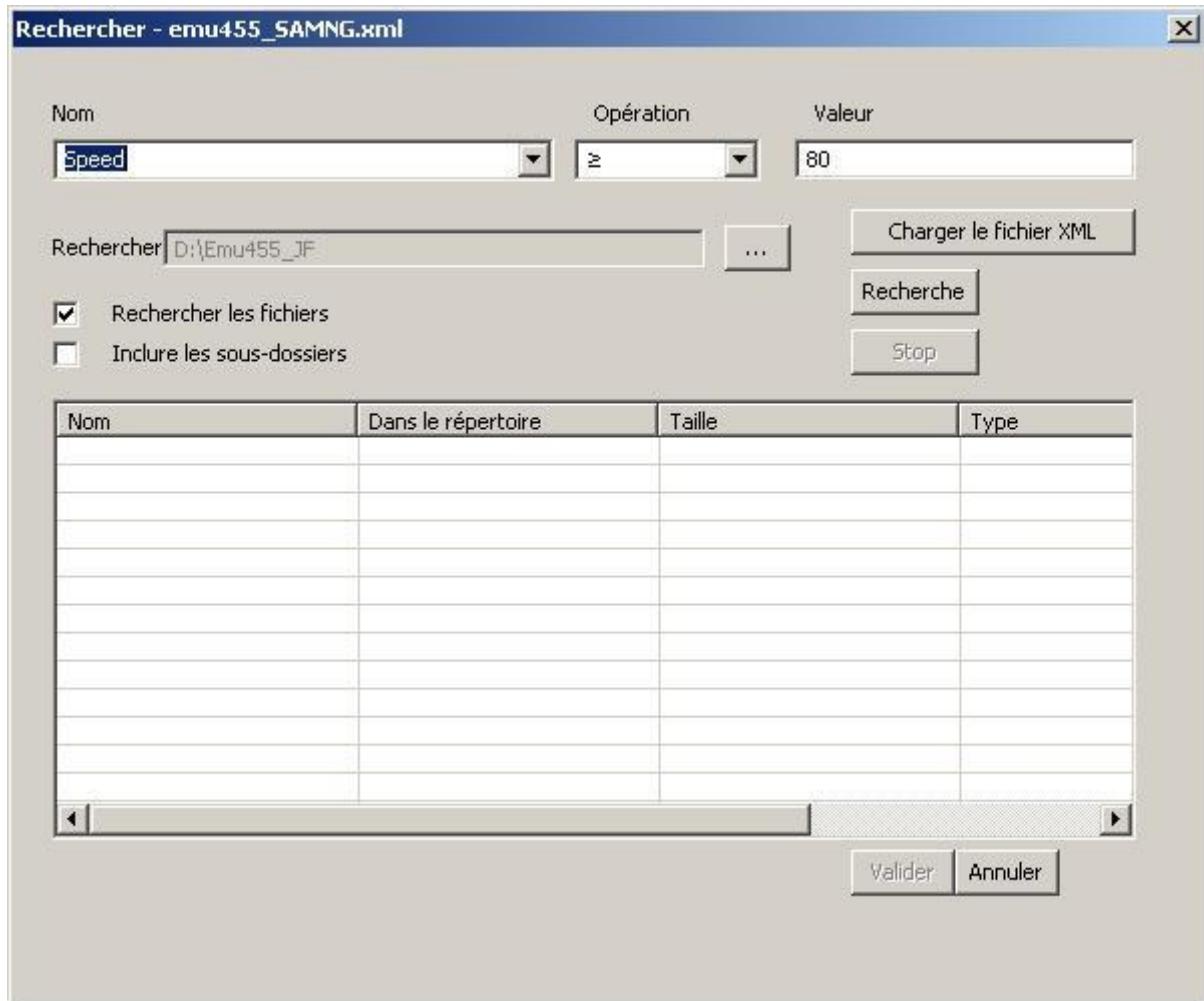


Figure 38

An advanced search of variables is available by selecting the <*Search*> element in the list. Refer to § 4.12.2 for a detailed description of this functionality.

In the "*Name*", "*Operation*" and "*Value*" zones select an equation with a variable.

Next, define the directory containing the files to be analyzed. If necessary, request an analysis of the full branch by checking the "**Include subfolder**" checkbox, then click on the "**Search**" button to start the search.

The result of the search is displayed in the lower part of the window.

The user can then select the file to be opened, by double-clicking on its name.

**NB:** When a search is started, the current file is closed. Messages confirming closure may appear.

#### 4.15.3 Masking and sizing columns

This function is intended to mask and size "List" and "Tabular" view columns. It is accessed via the contextual menu assigned to each view (this menu is called up by clicking on the right hand mouse button when the cursor is placed on the "List" or "Tabular" view) or via the  and  icons.

The following window is displayed:

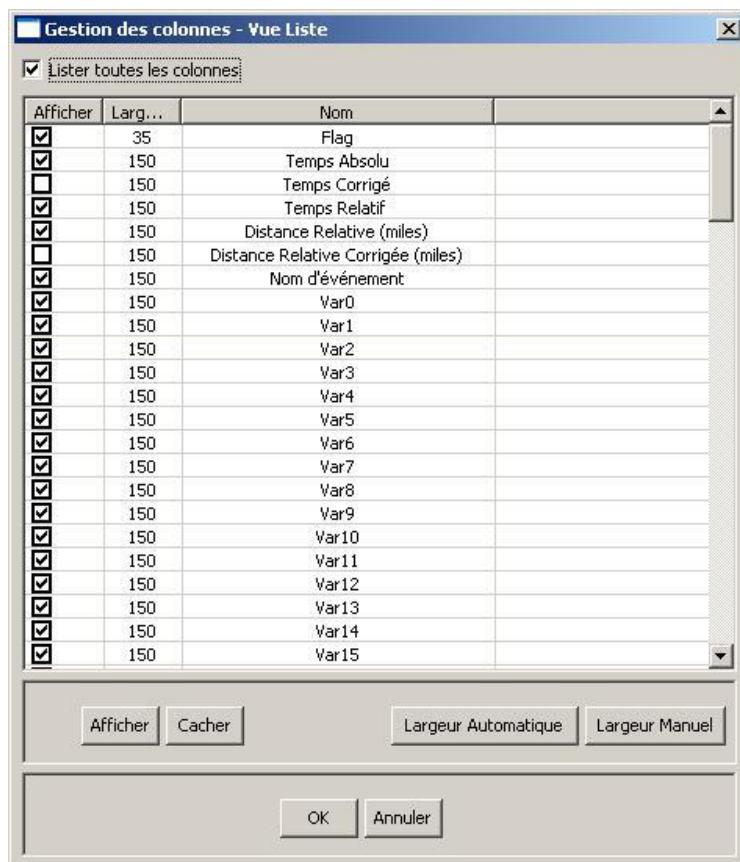


Figure 39

This window comprises a number of buttons used to:

- **"List all columns"**: In the "Columns management" window, lists all of the columns that can be displayed in SAM (columns displayed without applying filters, without hiding, ...)/In the "Columns management" window, lists only those columns currently being displayed in SAM.
- **"Display"**: Displays the selected columns.
- **"Hide"**: Hides the selected columns.
- **"Auto width"**: Initializes the selected columns in "automatic" width mode (the column width automatically adapts to the cell content so as to avoid cropping the data display).
- **"Manual width"**: Initializes the selected columns in "manual" width mode (the column width is set manually, regardless of cell content).

All of the parameters defined in this way are shown in the "Columns management" window, for each column in the view involved:

- **"Display"**: displays/hides the column.
- **"Width"**: column width (expressed in pixels in "manual" mode).
- **"Name"**: the column header name as displayed in the view.

Note:

It is possible to set these parameters manually without using the buttons, by directly entering the values assigned to the appropriate columns in the "Columns management" window.

It is also possible, via the "Columns management" window, to directly change the column widths in the views by placing the mouse cursor on the line that separates the column headings. In this case, a column that was previously defined in "automatic" mode is set to "manual" mode after resizing.

## 4.15.4 Saving user remarks

You can save the markers, annotations, corrected time and wheel diameter values set in a journey file at any time, using the "**File -> Save remarks**" menu. You will automatically be asked to save when you close the journey file. The data will be saved in a file that has the same name as the open journey file but with an ".xml" extension.

## 4.15.5 Exporting files

### 4.15.5.1 Exporting a journey file

This function is designed to export a journey file. To do this:

- Open a journey file.
- Choose the "**File -> Export to file**" menu to call up a browser window.
- Specify the name of the export file to be generated using the browser window opened previously.
- Click on the "**Save**" button, a "filter on variable" selection window is displayed.
- Select a "filter on variable" from the list of filters available.
- Click on the "**Export**" button to start generating the export file, in ".tsv" (Tab Separated Values text file format) or in ".csv" (Comma Separated Values text file format).

The export file is then generated in the directory specified by the user (the file is generated in ASCII format and contains only filtered data). Then it is possible to edit or print it using a program like "WordPad" or "Excel".

### 4.15.5.2 Exporting faults

This function is designed to export the fault conditions from a journey file. To do this:

- Open a journey file.
- Open the « Fault report » view
- Select the « Save » button in the view to display a browsing window.
- Specify the name of the export file to be generated using the browser window opened previously.
- Click on the "**Save**" button to start generating the ".rap" export file.

The export file is then generated in the directory specified by the user (the file is generated in ASCII format). Then it is possible to edit or print it using a program like "WordPad" or "Excel".

#### 4.15.5.3    Multiple exports

This function is used to export all journey files contained in a directory and its sub-directories in a single operation. It can be accessed from the "***File -> Multiple Exports***" menu.

After selecting the directory containing the files to be exported, the user can:

- either perform a partial data export by selecting one of the filters created for the tabular view,
- or perform a full export of all data if no filter is selected.

The files are exported in .tsv format (Tab Separated Values text file format).

N.B.: this action may take a large amount of time, depending on the size and number of files to be exported.

## 4.16 Listening to an audio file in the multimedia view

The multimedia view is used to display all the audio files which are linked to a journey file. The audio files are linked to a given journey file by their name. These are audio files which were recorded at the same time as this journey file.

The audio files have the .opus extension. The OPUS codec is a standardised codec which is supported by many commercially-available multimedia players, such as VLC.

A player integrated into the SAM multimedia view is used to start playing and listening to an audio file on a computer which has a sound card, a loudspeaker or a headphone socket, without the need to install multimedia software in addition to SAM5.

The SAM multimedia view's functionalities are described below.

### Multimedia view only:

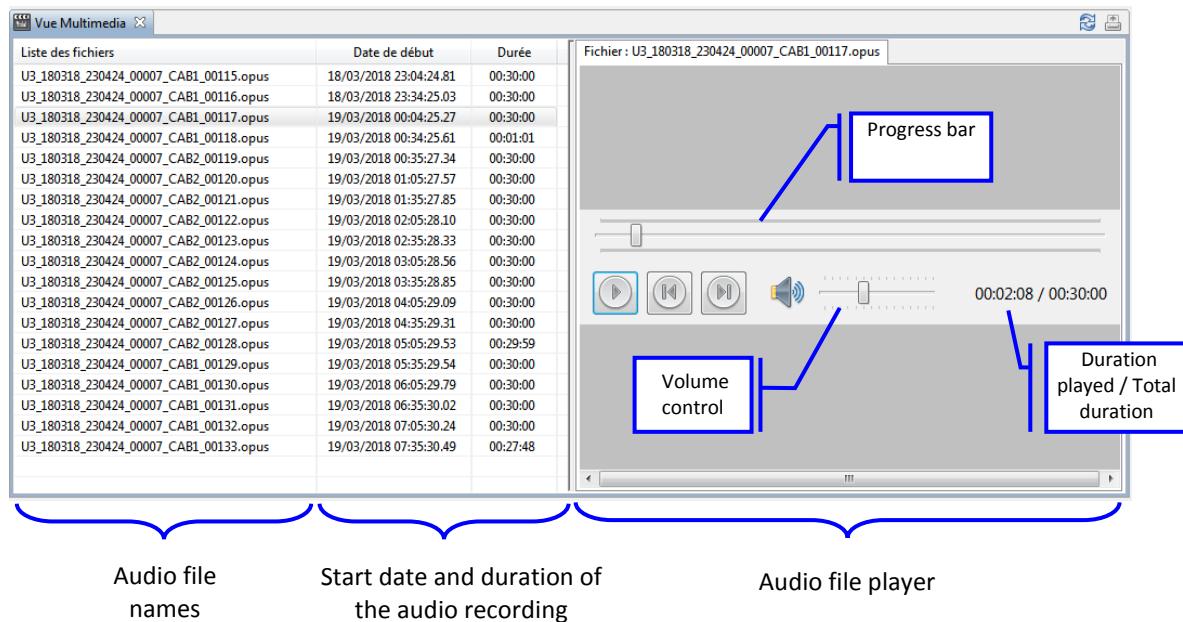


Figure 40

The three buttons in the Audio file player part are used to:

1. Start or stop playing the selected audio file – and buttons
2. Move onto the next audio file in the audio file list -
3. Return to the previous audio file in the audio file list -

## Multimedia view in the whole application:

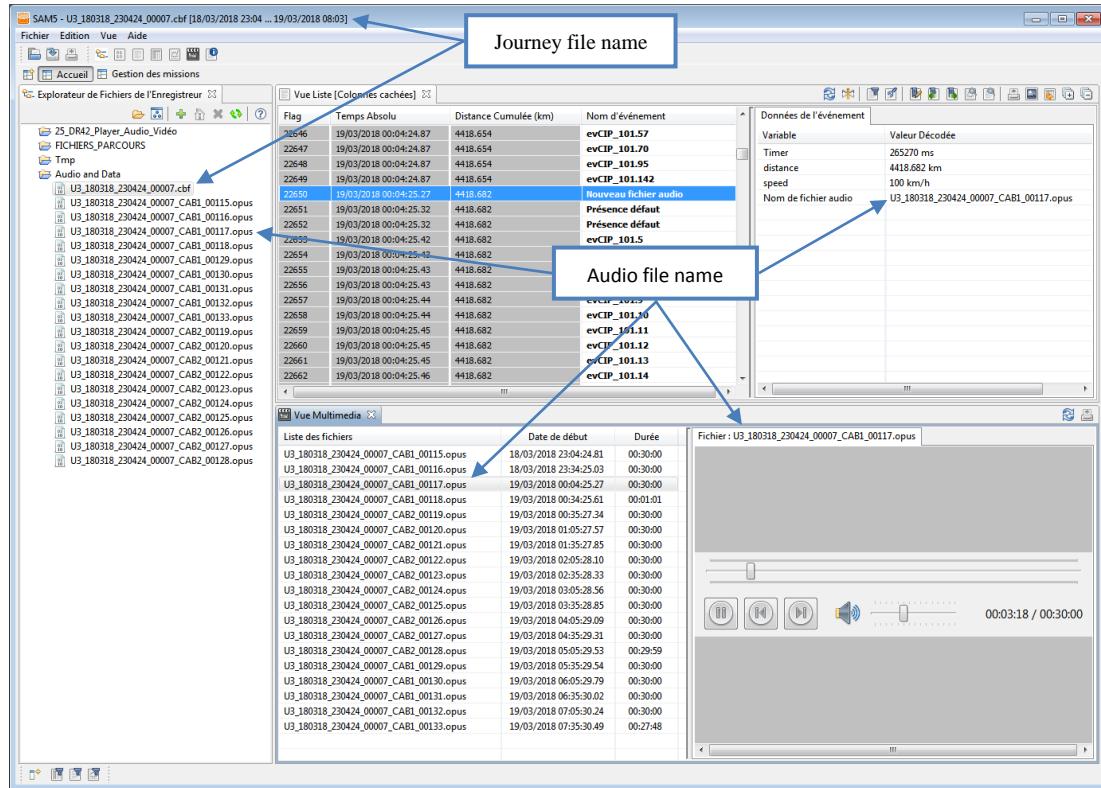


Figure 41

The synchronisation icon  in the multimedia view is used to synchronise the position of the multimedia player's progress bar cursor with the position of the closest event at time level in the List view and in the other journey file views.

Conversely, the synchronisation from any other journey file view is used to position the multimedia view's cursor at the same date to the nearest second as the cursor in the other views.

Therefore, it is possible to make a sound event in an audio file correspond with a driving event in a journey file.

## 4.17 Printing all the views

The purpose of this function is to print all the views shown on the screen. Access is via the "**File -> Print (short-form Ctrl+P)"** or via a dedicated icon located on the icon bar.

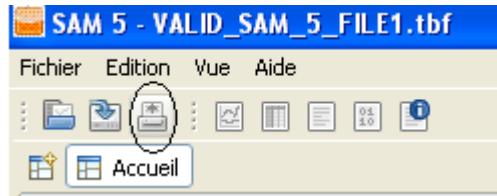


Figure 42

The window below is then displayed. You can choose the printer, the page format and any other printing options:

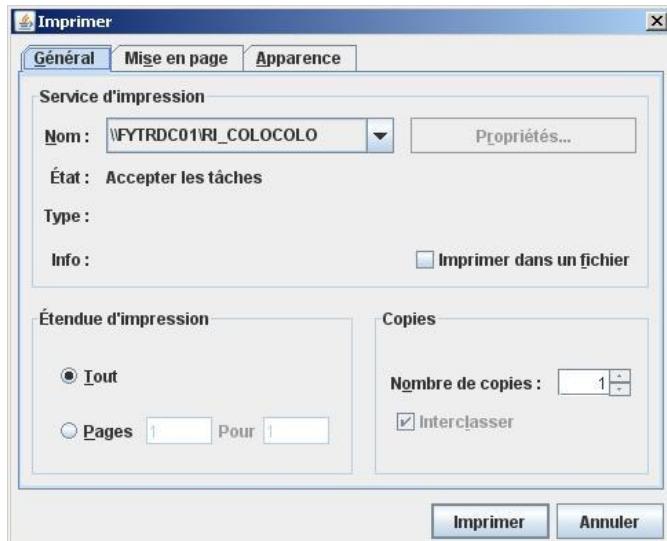


Figure 43

Printing example showing a graphic view and a list view:

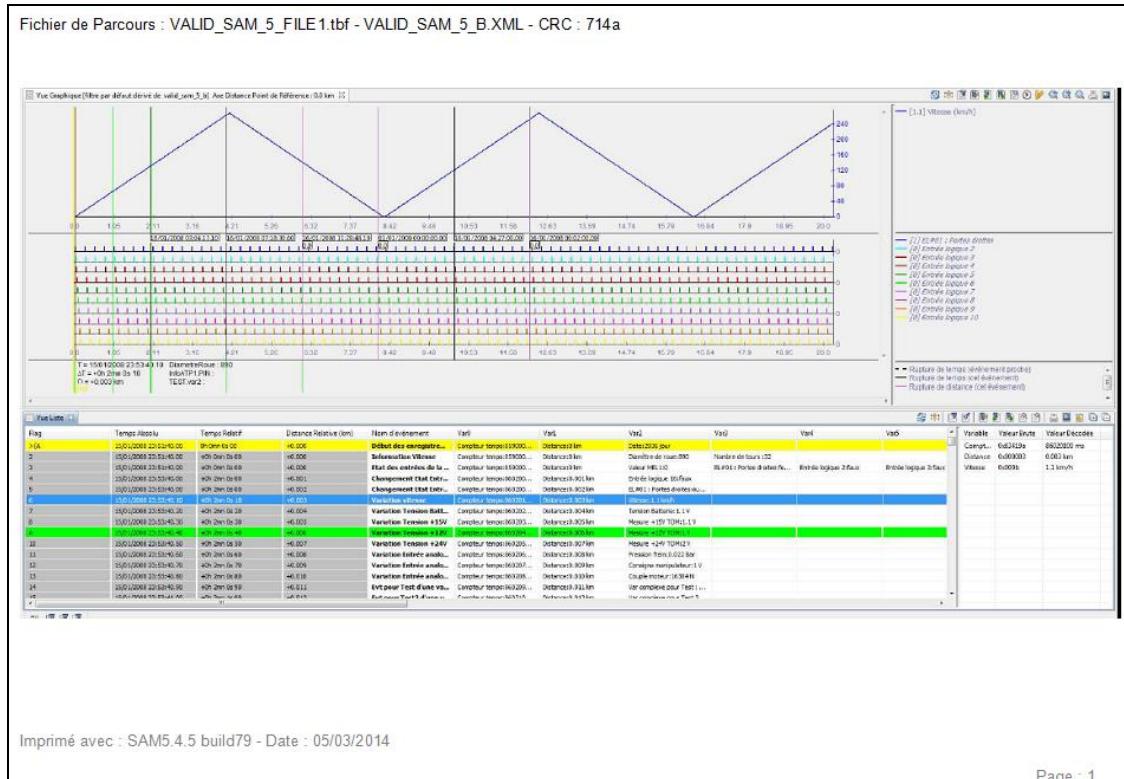


Figure 44

The file name concerned is shown at the top of the printed page followed by the name and the CRC of the XML file.

At the foot of the page you will find the SAM version and the date of the printout and the page number.

## 4.18 Printing a special view

The purpose of this function is to print:

- The entire active view,
- Or else only the lines selected for the “List” and “Table” views.

To print out a particular view, click on the following icon in its toolbar:

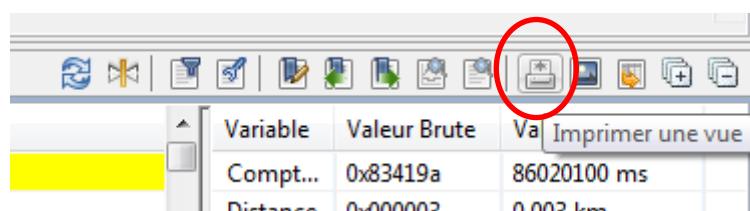


Figure 45

The window below is then displayed:

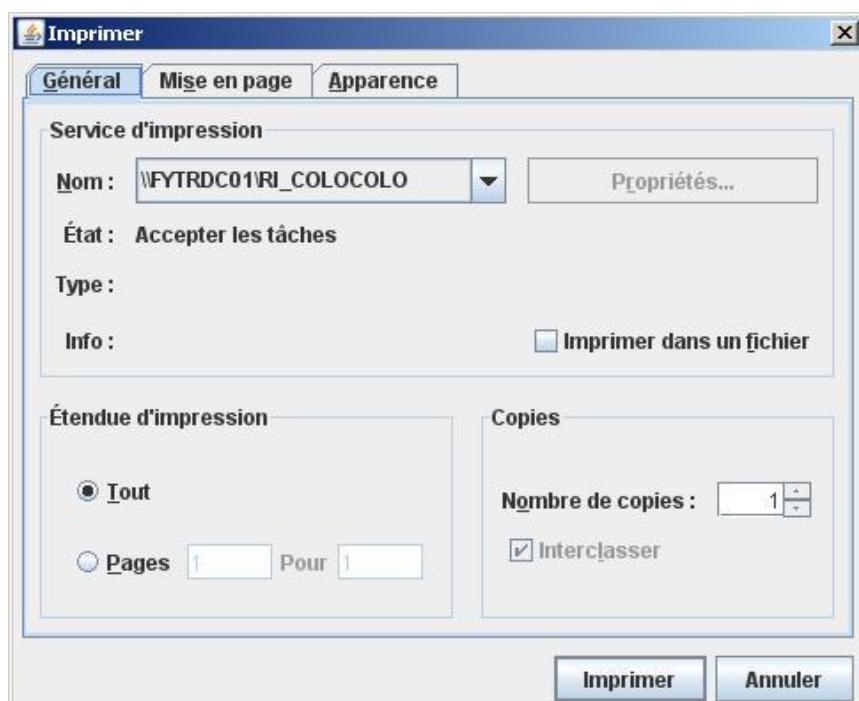


Figure 46

To print a complete view, please follow the steps shown below:

- Selection the view that you want to print.
- Open the printing screen, See Figure 46.
- Choose the printer and set its properties by using the "Properties" button
- Finally, press the "**OK**" button to launch the printer.

The view is then directly printed on the selected printer.

The information in the page header and footer is then uniform in all of the printed views:

- The header contains the name of the journey file, followed by the name and the CRC of the XML file.
- The footer contains the SAM version and the date of the printout and the page number.

Note: the printing width of the "List" and "Table" view columns can be adjusted by using the column width manager for the views (see paragraph 4.15.3).

## 4.19 Capture of pictures

This function is designed to capture a picture. To do this:

- Select the picture to capture.
- Click the  icon.
- Specify the name of the capture to generate using the previously opened browser window.
- Lastly, use the "**Save**" button to start generating the ".jpeg" format picture capture file.

The capture file is then generated in the directory specified by the user. Then it is possible to edit or print it using a program like "Paint".

Note: however, to obtain information about the journey file currently in use, it is preferable to use the printing functions described in paragraphs 4.17 and 4.18.

## 4.20 Managing profiles

There are two possibilities to obtain profiles:

- Create a new profile
- Import an existing profile

A profile directory consists of the following 3 directories (see Figure 47):

- Filters: it contains the set of filters created by a user. Refer to section 4.12 for more information.
- View configurations: it contains a backup of the column widths. Refer to section 4.15.3 for more information.
- VBV (Virtual Boolean Variables): it contains all the virtual variables created by a user. Refer to section 4.11 for more information.



**Figure 47**

#### 4.20.1 Creating a new profile

To make a new profile simply open a path file. The profile is created automatically. With each new XML file being used, a profile is created.

The profile is saved in the installation directory `\Users\Application Data\Faiveley Transport\SAM 5.x.x.bxx\profil\`. This profile contains no configurations (list of filters empty, etc.).

#### 4.20.2 Importing an existing profile

A profile which already exists in a prior version of SAM can be imported, to recover files created previously, for example.

Profiles are generally found in the following directories: `\Users\Application Data\Faiveley Transport\SAM 5.x.x.bxx\profil\`. The path can be different depending on the age of the versions.

NB: If an imported profile has the same name as a profile which already exists, the new one may overwrite the old one, with the user's agreement.

### 4.21 Fault report

The fault report can be viewed by selecting the "***View -> Fault report***" command from the main menu. The fault report contains the errors (where present) detected by SAM on opening a

journey file. The errors encountered may originate from a problem that occurred when recording the data in the journey file (CRC errors), or from an incompatible XML file used by SAM with the recorded data (modified, incomplete or out-of-date XML file).

If no fault is present, the window remains blank.

## 4.22 Using perspectives

The perspectives are view arrangements memorized by the software.

The "Reception" perspective contains an arrangement of views and screens that can be modified by the user. This arrangement is then stored in memory on closing SAM for re-use during the next session.

The "Missions management" perspective only contains the journey file explorer and cannot be customized.

In addition to these two perspectives, the software proposes a given number of predefined and non-customizable perspectives (P13, P23, P316, ...), that are used to quickly switch from one view arrangement to another type of arrangement.

To be available in the perspectives toolbar, a predefined perspective must be opened via the perspectives menu (see § 4.1.1).

The list of predefined perspectives is provided in the table below:

Name of perspective	List view	Tabular view	Graphic view	Multimedia view	Annotations view
P1	X				
P2		X			
P3			X		
P13	X		X		
P14	X			X	
P23		X	X		
P123	X	X	X		
P316	X	X	X		X
P34			X	X	

## 4.23 Application preferences – Language selection

The "*File -> Preferences*" menu can be used to change the language in which the application's menus are shown. Selecting another language closes the software. The language change is effective after application reboot.

The following languages are available:

- English
- Italian
- Dutch
- Spanish
- French
- German
- Turkish
- Chinese