Main differences between V1.14 and V1.14.1

This minor version is due to some corrections and evolutions about the new comportment of the standard application vs the "*****" management. Indeed, the "*****" were only displayed on an actual modification of the context but it implies that all the widget hierarchy has to be managed using isModified() methods. So, using the V11.4 version, most of the time no more "*****" are displayed !

Evolutions:

- As it is not so easy to manage the "*****" using the isModified() methods, the method setContextLabelModifiedOnActionOnly(true/false) has been added to specify if "*****" will appear on an actual modification or, more simply, on any action as previously. Moreover, the default mode corresponds to the one before the V1.14 version.
- It is possible to get the widgets corresponding to the buttons and the entry field activated to move inside a GComponentList. In some cases, it could be useful to discriminate a simple display action versus an actual modification.

Anomalies:

- In the GChoice and GMultipleChoice widgets, the "*****" did not correctly appear after reading a context file (the "*****" was kept except if we read the same value as before).
- GEntryFileName did not manage isModified() method.
- In the GChoice widget, the updateIsModifiedIndicator() method was not systematically called.
- setSavedDuration() method was not present in the GTime class.

Main differences between V1.13.3 and V1.14

This version is relatively light and includes the following points:

Evolutions:

- The scroll bars of the GMainFrameAbstract widget are set now to "**NEVER**" in order to avoid too many scrollbars due to included panels. Anyway, it is possible to change it via dedicated setters.
- The GEntryFileName widget has been improved to take into account the possibility to select a folder and no more only a file. In that case, an option is available (via a setter) to create this folder (and the parent ones) or just to display its name.
- A reset() method has been added to the GConsoleLogger class.

Anomalies:

- Correction on an anomaly in the GEntryRealVector widget when reading data (the "*****" was wrongly displayed).
- Correction on the fact that the GMainFrameAbstract widget dis not manage correctly the "*****" as it was displayed, for example, when the user moved inside a list as nothing was really modified.

Main differences between V1.13.2 and V1.13.3

This version only takes into account the following two points:

- The GComponentList contextual menu (Items+/-) was not always correctly updated versus the "Remove" possibility.
- It is now possible to use the setTab() method to modify the content of a tab of a GTabbedPane object.

Main differences between V1.13.1 and V1.13.2

This version includes these evolutions and corrections:

- On the GEntryReal widget, the units field is now, by default, stuck just on the right of the entry field. It is no more necessary to overwrite constraints.
- A new type of units is now available managing Bytes.
- When using log file generation, it is now possible to save it in the middle of an execution.
- The forcedStatus management was not correctly done dor the GEntryString widget.

Main differences between V1.13 and V1.13.1

This version includes these evolutions and corrections:

- On the new GEntryFileName widget:
  - add a setLabel() method.
  - add the getSubComponent() method to rule the constraints.
  - the selected file was not correctly updated when we read a context file.
  - The GReadWrite interface was not fully respected as the GTextAreaWithLabel widget did not include it : it is now the case.
- A resetContextFileName() method has been added in the dans la GMainFrameAbstract class.
- We can force the error/warning status in the GMultipleChoice.

Main differences between V1.12.1 and V1.13

Summary

Native Java options when lauching a process

Previously, it was only possible to launch a process as via the GJavaCommandLauncher class only by specifying the runnable class name and its arguments. Now, there is a new argument allowing to call for native Java options (as heap space size)

New GEntryFileName widget

A new widget (GEntryFileName) allowing to enter a file name is now available. It consists in:

- a text field where it is possible to enter directly the name but it will verify if the file exists and, if it is not the case, will send an error status
- a button to launch a browser where to search the file
- a specific mechanism to display the relative or the absolute path name.

New version of JFreeChart

Now, **GENIUS** is using JFreeChart V1.5.0.

Customization

We added some colors customization for the following widgets:

- Text color for GHyperlinkLabel
- Colors for error and/or warning status
- Background color for GMainFrameAbstract console.

Anomaly corrections

- Bad management of GTime widget forced status
- Adding the setDefaultValue for GTime widget
- Uncompleted test on GEntryReal widget : now, we test Double.POSITIVE_INFINITY and Double.NEGATIVE_INFINITY and not only Double.NaN
- For a standard application, when we tried to load a context then, cancel the operation, the previous context name was cleared. Now it is kept.

Main differences between V1.11.4 and V1.12.1

Several interesting evolutions and corrections in this new version:

Summary

GCalculator with SQlite file

Now the GCalculator widget used inside the GPlotPanel widget is able to manage SQLite files.

Possibility to read a file where a tab is missing

In the previous versions, if we added a new tab in our application, it was not possible to read an old context with only (n-1) tabs. Now, as for any other basic input widgets, this functionnality is available using "by default" values.

Buffered console in the standard application GUI

There is the possibility to use a GBufferedTextArea widget for the console of a standard application. Nevertheless, it will be mandatory to add an "exit" line of code at the end of the batch computation:

```
batch = new BatchSW(nomFicData, nomFicEphem);
batch.compute();
System.exit(0); // Useful when GBufferedTextArea is used
```

Possibility to save a GPlot configuration

Now, using GPlotPanel, it is possible to save a plot configuration (then to load it) that will include:

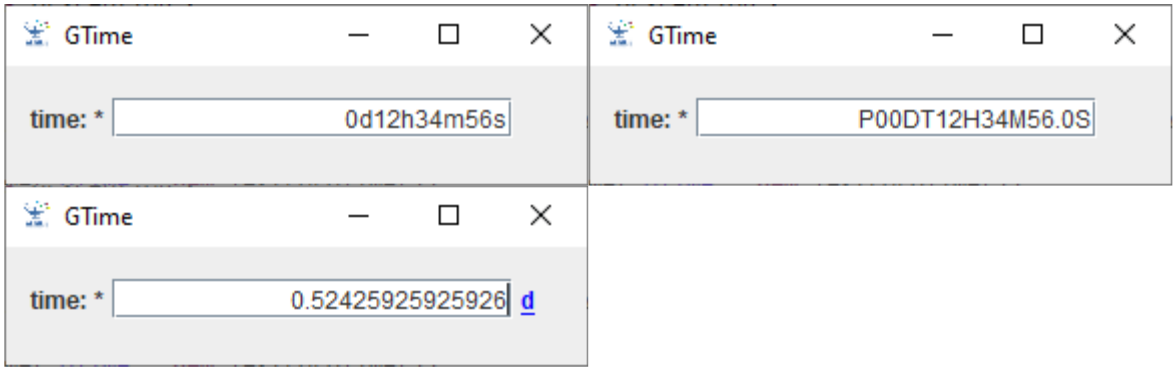
- name of the used file,
- type of plots,
- titles,
- zooms,
- ...

This functionnality is still incomplete and will be improved in the next versions.

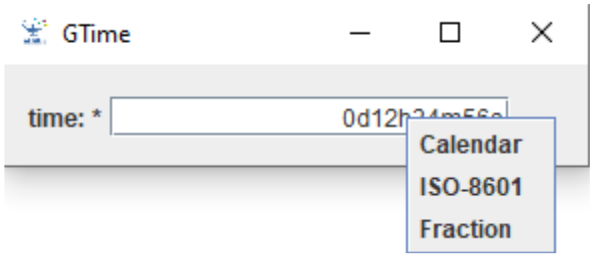
New display formats for GTime

There are new possibility for duration display using GTime widget :

- as in the previous version (calendar format),
- as a double value with units "s", "m", "h", "d", etc.
- using ISO-8601 format (for example PT6H for6h00)



Change (and conversion) of the format is done using a right click on the input field.



Anomaly corrections

- GTime:
  - The unit used for a day is "**d**" and no more "**j**" (even if this unit is maintained).
  - Method update() is now public.
  - The name of the method to add an interval of validity is now addGInterval() rather than addInterval().
  - The text used for the interval of validity tooltip is corrected and more explicit.
- GTabbedPane: increasing robustness when tabs are created when reading a context file.
- GComponentList: now the "Duplicate" option only appears if Cloneable interface is available.

Main differences between V1.10.1 and V1.11.4

Some interesting evolutions and corrections have been implemented in this version. No incompatibilities have been identified versus V1.10.x source code (except the fact that Java 1.8 is now necessary).

Summary

Java 1.8

Now, Java 1.8 is needed for generation.

GPlotPanel equations

A very interesting evolution with the possibility to create new variables using initial ones from a **MADONA** column file via a specific equations (see here). To do it, GENIUS used a new dependency with exp4j V0.4.8. Nevertheless, this functionality is not yet available for SQLite files.

GPlotPanel pop-up windows for event comments

Now, when events are displayed, there is the possibility to see the comments associated to these events by passing the mouse over.

GStandardApplication customisation

Some access methods are now available to easily add/remove/shift main menu bar items (for example, removing in the "Options" menu, the "debug" choice and replace it by and "expert" choice).

GStandardApplication message window size

The user may increase or decrease the message window size interactively (with the mouse).

Best mouse efficiency for scrolling

The mouse scrolling has been improved.

New GTime widget

A new GTime widget is now available.

Best precision management when reading MADONA XML files

Some values read in a **MADONA XML** file, once they are converted in **International System (IS)** units may occur a problem of precision. In case of a conversion from degrees to radians, it is quite normal but it is more astonishing for a conversion from km to m as we have just to add a 1000 factor: for example, 0.03827 km will give 38.269999999999996 m. Therefore, **GENIUS** uses now locally **BigDecimal** numbers to improve as much as possible these conversions.

Anomaly corrections

- In the previous versions, there was a possible bug when reading **MADONA** columns files if the first column number was not "0".

Main differences between V1.10 and V1.10.1

Anomaly correction

- Correction of the anomaly in GPlotPanel when more than one “date formatted” columns are present in a MADONA file.

Main differences between V1.9.1 and V1.10

Summary

New Reset functionnality

By using the Copy & Paste functionnality, it is also possible to reset the data.

Blank characters in GContextFileManagement widget

Now, when using GContextFileManagement widget setting directly a file name with blank characters before or after the name, it will correctly take into account it.

Possibility to plot EVENTS files

It is now possible to plot "**EVENT**" files coming, for example, from the PSIMU software.

Mouse efficiency for scrolling

The mouse is now more efficient when we want to scroll.

GList widget improvements

The following methods have been added to the GList class:

- removeAllElements()
- getSize()
- getJList() for getting the original swing JList object
- setVisibleRowCount() calling the method of the swing JList object.

At last, command **Ctrl-a** works better.

GFreeChartXY widget improvements

The GFreeChartXY widget has now the possibility, after selecting a point on a plot (or anywhere on the (x,y) plane), to get the coordinates of this point. This can be be very useful if we want to execute some process using these coordinates. This functionnality has also been implemented in the two higher level widgets GPlotPanel and GGroundPlotPanel.

Moreover, some changes have been done:

- by adding a constructor with a secondary axis but without the *widgetId* argument
- by adding a setter (setForcedDrawLine() method) to get the possibility to plot both with plain line and symbols.
- by adding the possibility to modify the automatic legend with removeLegend() et addLegend() methods.
- by changing how to call the addSerie() method, removing *serieName* and *shape* redundant arguments

Writing MADONA column files improvements

A new constructor of the MadonaWriter class is available, allowing to precise how many digits we want

```
public MadonaWriter(final List<String> headerInfoLines, final int colPrec)
```

Moreover it is now possible to specify the amount of blank characters (4 by default) between two columns with the writeColumns() method of the FileColumnWriter class:

```
public void writeColumns(final String spaceCol)
```

Anomaly corrections

- The information about discontinuities between two points to be plotted (thanks to a threshold value given in a Madona file) is now correctly managed.
- Using GPlotPanel] widget:
    - when we use a SQLite file, we can now display data together from the ephemeris table data but also from the events table.
    - calendar date axis display is done when the unit is *~cal* and no more only if the name of the variable is "*DATE*".
- Using Standard application widget, when the pre-processing inhibited the process launch (for example due to an error in the data), the message is now "*start computation aborted …*" rather than "*start computation …*"

Main differences between V1.9 and V1.9.1

Anomaly correction

- Correction of the anomaly in GPlotPanel when plotting data function of calendar dates for specific dates involving some gaps (summer/winter time).

Main differences between V1.8 and V1.9

Summary

New GList and GListSelect widgets

GList and GListWithLabel widget has been added allowing to display a list of strings (a bit like GComboBox) but allowing selecting several elements.

Moreover, a higher level GListSelect widget is also available allowing selecting elements of a list to copy/move them in another one.

Finding and reading multiple data

GENIUS already owns static methods from class GFileManipulation allowing reading or writing data. Nevertheless, these methods only work at a single level of the data structures and do not include multiple search.

Now, it is possible to search inside a XML file (or a **GENIUS** data structure) one or several data "sub-structures" using mainly the GMultipleStructureChoice class.

A typical application of such a functionality is to get some data from a "A" application to get it in a "B" application.

New GTree widget

As it is used by the GMultipleStructureChoice class, a new GTree widget is now available.

GplotPanel improvements

Symbol choice in GPlotPanel widget

It is now possible to select which symbol will be used for a plot (line for a continuous draw or symbols as circle, square ... for dotted lines).

Calendar date format in GPlotPanel widget

Dates are no more displayed in Julian days but in a calendar format.

Possibility to plot several files in GPlotPanel widget

Since this version, GPlotPanel allows taking into account several files for plots.

- the by default mode is still considering only one file.
- if we need several files, the first one is considered as the "reference" one.
- other files will be taken into account only if they include variables existing in the "reference" file (as read in the file header).
- user could decide to plot directly the values contained in the files or to plot relative values thanks to the "reference" file.

Availability of a tool based on GPlotPanel widget

The GPlotPanel widget is quite complex and powerful, allowing manipulations after reading text or SQLite files. Nevertheless, the only way to use it up to now was to develop a Java code or to call a higher level tool that uses it (as PSIMU).

That is why, a compiled tool with its own GUI is available with this version.

New units

In previous versions, the unit symbol for a day was "**j**" (*jour* in French ...). Now, it is also available as "**d**". Moreover, two other units are available with "**mo**" for month (or *mois* in French ...) and "**y**" for a year (or "**a**" for *année* in French). Conversions are the following ones:

- 1 year = 365.25 days
- 12 months = 1 year
- 1 day = 86400 s

Indication when loading a configuration

Some configurations may be very long to be loaded because of the amount of data. In such a case, an indicator (a turning wheel) will show that the application is still running.

Better file suffix management for the GSaveResults widget

In previous versions, it was not possible to manage different suffixes for any kind of results files. Now, it is the case, using an additional API for the addSingleResultFile() method.

Minor improvements for GComponentList widget

- adding the add(final int rank, final GComponent item) method to add a component to the list.
- adding the remove(final int rank) method to remove an element in the list.
- adding the setCurrentItemRank(final int rank) method to select the current element.

Anomaly corrections

- Correction of the management of additional panels for the GPlotPanel widget.

Main differences between V1.7 and V1.8

Summary

Clear constraints

It is now possible to reset constraints of a widget using the clearConstraint(), clearInnerDescendantConstraint() and clearAllInnerDescendantConstraint() methods.

Complex status management

Thanks to the setForcedStatus() method, it is now possible to manage more complex status as above several entries.

Absolute path for condensed status

When managing error/warning status, it is now possible to get directly the absolute path of a data using the getPathInConfigFile() method.

GPanel interval margins

For GPanel only, we may manage internal margins using the setMargins() method.

GDetachedPlotPanel list

It is now possible to get the list of detached panels (useful for needing updates or refresh of such panels).

Specific icon

Using the static GEnvironment.setIcon() method, it is now possible to use a specific icon for your application rather than the by default Java one. Nevertheless, Under Windows OS, it is not yet possible to change the icon of an executable jar file (except creating a shortcut).

Ground track widget

A new widget is available allowing to plot ground tracks above a planisphere image.

Anomaly corrections

- An anomaly occured in GPlotPanel when trying to plot data function of absolute dates for specific dates involving some gaps.
- When writing MADONA files, an additional line is created just after the header; hence these files are no more directly readable by the GPlotPanel widget.

Main differences between V1.6.2 and V1.7

Summary

SQLite files

GENIUS proposes now possibilities to store data in SQLite formatted files. It is particularly interesting for computation results as ephemeris or any kind of numerical results.

GPlotPanel evolutions

- Now, GPlotPanel may interpret SQLite data files.
- It is possible to initialize the starting directory when the widget is created (or via a setter method).
- It is also possible to deactivate the possibility to choose the file to plot (considering the name of the file has been initialized previously inside the code) : it allows to use GPlotPanel for fixed configurations with the setSelectedFile() method.
- Plots properties are available via the setDatasetPlotProperties() method (continuous plots, point by point, etc ...).
- At last, it is now possible to manage plots discontinuities.

=> incompatibility in the code due to a different argument in the constructor.

GFreeChartXY evolutions

It is now possible to define the kind of shape for plots drawn point by point and to add tooltips for such points.

And as for GPlotPanel, it is now possible to manage plots discontinuities.

=> incompatibility in the code due additional arguments for the addSeries() method.

Status notion for GComboBoxWithLabel widget

It is now possible to associate an **error/warning** status to some values proposed in a GComboBoxWithLabel widget.

Copy/Paste/Import/Export functionality for a component of a widget list

GENIUS gives now the possibility to activate **Copy/Paste/Import/Export** functionality for elements of a widget list for example in GComponentList (useful for some GENOPUS widgets).

GArithmeticException

A new exception has been introduced: (GArithmeticException). It is raised every time we try to put a NaN value in a real number widget (GEntryReal, GEntryRealVector, GSliderReal and GSliderRealWithLabel). Indeed, we can't have NaN inside a textfield but getting it inside a context file and read it, or via the setValue(), setDefaultValue() and setSavedValue() methods. This exception is important to protect **GENIUS** low levels widget against NaN as well as ArithmeticException returned by some **PATRIUS** objects in GENOPUS widgets.

GUnitFactory

The static GUnitFactory.getGUnitArray() method is now available to simplify the creation of table of units.

Anomaly corrections

- Copy Paste on GTable1D widget: after executing a "copy/paste" action on a GTable1D widget and if the result is only one modified vector (one value inside the vector but no size changing), the " ***** " character indicating a modification occured now appears.
- Update of the title for GPlotPanel widget: in previous versions, after loading the firs plot from a file, the title was "calculated" thanks to abscissa and ordinate which was required. On the contrary, after a "Clear" and even if a new file is loaded, the title wa no more updated. It is no more the case: after activating the "Clear" button or if a new file ,is loaded, the title is set to a void character string.

Main differences between V1.6.1 and V1.6.2

The identified bugs on the V1.6.1 have been corrected:

- Now, the JVM will no more continue to run after exiting a GENIUS application when using the GStandardApplication widget.
- It is now possible to read a MADONA XML formatted files as the absolute path of the file contains some blank characters.
- In GStandardApplication, texts are always added at the end of console areas.

Main differences between V1.6 and V1.6.1

This version only corrects an anomaly when using "headless" mode (i.e. using code without display definition as for clusters).

Otherwise, it is completely equivalent to the V1.6 version.

Known bugs

- Sometimes the JVM will continue to run after exiting a GENIUS application when using the GStandardApplication widget => will be corrected in V1.6.2
- After reading a MADONA XML formatted files, if an error (exception) is raised as the absolute path of the file contains some blank characters, nothing occurs (i.e. no messages appear while data do not have been loaded) => will be corrected in V1.6.2

Main differences between V1.5 and V1.6

Some minor evolutions and corrections have been implemented in this version. No incompatibility has been identified on V1.5 code source.

Summary

Creation of the GEntryConstant widget

This widget is a specific GEntryConstant widget offering the display of a dedicated button to get predifined values. It is useful for specific physical "constants" that depend on a model as gravitational term, equatorial radius, etc ...

Creation of the GStandardApplication widget

Specific widgets have been created to get a "standard" main application frame (see specific How to build a Standard Application GUI topic)

Creation of class and methods to build VTS files

It is now possible to use the objects to create VTS files (ephemeris, attitude and event ones):

- VTSHeaderInfo
- VTSEPHWriter
- VTSATTWriter
- VTSEVEWriter

Unique GUnit class

The internal units management has been slightly modified in order not to have specific units for temperatures and percentages. This management also allows to manage consistency between different units (i.e. « km » is consistent with « m »). This functionality is mainly used by the GPlotPanel widget.

Possibility to set the mininimum and maximum amount of elements in GComponentList

It is now possible to set a minimum and/or maximum values for the size of the list displayed (useful if the widgets are memory consuming and may cause some JVM memory error).

=> possible compilation error due to the add of an exception when using the setList() method.

Not useful scrollbars in GComponentList

A side effect of a V1.5 evolution was the fact that, by default, a GPanel has its horizontal and vertical scrollbars activated (if needed). As GComponentList creates intermediate GPanel, it ensued a not very ergonomic scrollbar stacking. Now, these intermediate scrollbars do not appear anymore.

Possibility to get one or several colums data with the getColumns() method of GPlotDataMadonaReader

In the previous version, this method allowed getting to data columns : one for the abscissae, the other for the ordinates. Now it is possible to get as many columns as possible.

Evolution of GCommandLauncher to allow two different GTextArea interfaces (Output & Error)

Modification of GCommandLauncher to allow to send stdout and sterr flows towards two different GTextAreaInterface. If only one GTextAreaInterface is given, both stdout and sterr will be sent.

Non recoverable exceptions management

Some exceptions cannot be directly catched. As an example, in the previous versions, we may raise an exception when we enter a wrong date format in a GEntryDate field. The result was displaying a pop up window including the stack trace of the error which is not very ergonomic. Now this sort of pop up windows will not appear but is possible for your application to get it or to have a specific pop up window. A specific tutorial is available in the (Training:genius examples.zip).

Anomaly corrections

- Error when reading a date with GPlotDataMadonaReader: in the previous version, reading a date could occur up to one second error.
- After a copy-paste action on a GTable1D widget, the result was a single modified vector with only one modified value and no change on the size of the vector. Moreover, the "*" sign did not appear.

Main differences between V1.4.1 and V1.5

Summary

Better management of the "*" sign when read/write and copy/paste actions

There are both aspects covered by this change :

- first, the apparition (or not) of the "*" character after a copy/paste action is more intuitive
- then it is possible now to customize the way these "*" characters will appear after reading or writing a configuration file (see specific GReadWrite interface and data files management and Modified data topic).

=> incompatibility in the code (due to the add of a boolean flag for GFileManipulation.readConfig(), GFileManipulation.writeConfig(), GContextFileManagement.selectLoadFile() and GContextFileManagement.selectSaveFile() methods).

Data status for GtabbedPane

Now, the data status management is automatically taken into account by the GTabbedPane widget. Moreover, each tab can be configured individually to display the status of the contained panel or not.

Exit Event test on GFrame

We can customize the behaviour of a GFrame after clicling on the "x" case. For example, it is then possible to manage this behaviour by displaying a GFrame window asking if we actually want to quit or not (using the fact that this "click" event is now managed as a **GENIUS** event).

GPlotDataReader interface creation and possibility to read dates with GPlotPanel

It is now possible to interpret dates with GPlotPanel (see specific GPlotPanel topic). Moreover, it is possible to create our own way to read files via the GPlotDataReaderInterface.

Global variables management

This version proposes an easy solution to manage the update of the content of a widget depending on the modification done on another one when both widgets are not included in the same higher level widget. It is explained in the following Update data topic

Some improvements for GBufferedTextArea

The behaviour of a GBufferedTextArea is more intuitive (for example, the number of the first page is no more 0 but 1 !).

No log file creation by default

By default, in the previous versions, a Genius.log file was automatically created. Now it is no more created and if we want to do it, we have to use the GEnvironment.setLogFileName() method.

1.1. MODIFICATION OF THE STDOUT MANAGEMENT WITH G[JAVA]COMMANDLAUNCHER

Due to the introduction of the GTextAreaInterface (see V1.4.1) as argument of a GJavaCommandLauncher object, a side effect occured for stdout management. So, if we want to duplicate output in a console (or to get this output in a console when no GTextAreaInterface has been passed [null argument]), we need to use setCopyOutputToStdout() method.

Anomaly corrections

- GComboBox and GComboBoxWithLabel before management.
- GEnryInt and GEntryDate tooltip management.
- Amount of digits in the tooltip not consistent with the one chosen for the input area.