

# Main differences between V2.0 and V2.0.1

## Summary

- [Event management](#)
- [GPVisibilityFromStationDetector](#) data read
- [GPManeuverScenario](#) and [GPManeuverSequence](#) I/F
- [Bad Local time correction](#)

Due to the upgrade of [PSIMU](#) tool (V11.3), some slight modifications have been made necessary. These modifications are mainly internal to **GENOPUS** and deal with:

## Event management

“n, m, p” event management, especially with maneuvers and attitude sequences have been modified.

## GPVisibilityFromStationDetector data read

Problem linked to the [read\(\)](#) method of the [GPVisibilityFromStationDetector](#) widget: some data was not correctly read.

## GPManeuverScenario and GPManeuverSequence I/F

Some interface problems on [GPManeuverSequence](#) and [GPAttitudeSequence](#) classes led to internal modifications.

## Bad Local time correction

Bad correction from [radian](#) to [hours](#) of the logger (12 hours offset) in the [CustomLocalTimeDetector](#) class.

# Main differences between V1.3.1 and V2.0

## Summary

- [PATRIUS](#) and [GENIUS](#) upgrade
- Saving the Orbit data displayed
- TLE entry
- By default values
- Ground Station widget

## PATRIUS and GENIUS upgrade

Now, [GENOPUS](#) is linked with a more recent [PATRIUS](#) version (V4.1.1). This update permits to get less "Custom" classes (see [here](#)) as these ones have been deployed directly in [PATRIUS](#). [GENOPUS](#) uses also the last [GENIUS](#) version (V1.8)

## Saving the Orbit data displayed

It is now possible to save the way the orbit data have been displayed via the [GPOrbit](#) widget independently of the "Pivot" (i.e. the way the orbit data have been saved in memory).

## TLE entry

Always for the [GPOrbit](#) widget, it is now possible to enter directly [TLE](#) data. These data will be automatically converted in osculating parameters.

## By default values

In the [GPSunPointingAttitudeLaw](#) widget the by default axis are now [+I](#) and [+J](#) (rather than [+I](#) and [+I](#) in the previous version).

## Ground Station widget

A specific [GPGroundStation](#) widget for defining ground station data has been created. This widget is also used in the [GPVisibilityFromStationDetector](#) widget

## Main differences between V1.3 and V1.3.1

The only difference with the previous V1.3 version is the fact that it is originally linked to PatriusDataset V1.0.3:

- new **UTC/TAI** table
- new **JPL** DE406 ephemeris (by default !)
- new **EOP** data

## Main differences between V1.2.1 and V1.3

Some corrections and new features mainly due to the update of the [PATRIUS](#) version (3.3) and use of **GENOPUS** by [PSIMU](#).

### Summary

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### Compatibility with PATRIUS V3.3

This **GENOPUS** version is compatible with **PATRIUS** V3.3 (especially with its new management of exceptions due to divisions by zero).

### Copy&Paste

Some **Copy&Paste** (and **Import/Export**) functionalities have been added to **GENOPUS** widgets as [GPOrbit](#), [GPVehicle](#), [GPManeuverSequence](#), ...).

### GPFramesConfiguration

It is now possible to initialize the [GPFramesConfiguration](#) widget with a specific configuration not necessarily issued from a Factory thanks to [setFramesConfiguration\(\)](#), [setDefaultFramesConfiguration\(\)](#) and [setSavedFramesConfiguration\(\)](#) as well as adapted constructors with a [FramesConfiguration](#) object as input.

## GPEventDetectors

- It is now possible to specify the list of available actions associated to the event and, when only one action is indicated, it does not appear on the **GUI**.
- for events which manage multiple occurrences, changes occurred to be more obvious for the user with now three entries:
  - From  $n^{\text{th}}$  occurrence
  - Every  $n$  occurrence
  - Until  $n^{\text{th}}$  occurrence
- There is no more CodingEvents in the events definition

=> incompatibility in the code due to the possibility to specify the list of available actions and to the occurrence management

## GPVehicle

The way to manage mass properties has been improved in order to allow to make mandatory the fact to display dry mass value. Moreover, when this value is equal to zero, it raises a warning and no more an error.

## GPForceModels

- It is possible now to hide the choice of the "attraction models" (i.e. **Balmino**, **Cunnigham**, ...)
- as well as to define which models will be displayed.
- Maximum degrees are now displayed when variable potential is selected.
- By default values are proposed for **SRP**.
- Name of the model must be set as a new parameter of the constructor.

=> incompatibility in the code due to additional arguments for the full constructor

## GPManeuvers

- If engines and/or tanks needed to define a maneuver is set to **NONE**, the maneuver (and the sequence) raised an error.
- by default, maneuvers components are set to "**Angular**" as event is a "**Relative date**".

## GPAttitudeSequence

- It is now possible to define an attitude sequence more simply than using switches, using a single attitude law.
- the constructor has changed as it is also possible to define how the attitude laws list will be displayed (one by one or all in a vertical lists allowed by the [GENIUS GComponentList](#) widget).
- If an attitude law is set to **NONE**, the sequence raised an error.
- only **RESET\_STATE** or **RESET\_DERIVATIVE** may be selected as actions for switch events.
- by default, attitude laws angular bias definition is set to "**ZYX Cardan Angles**".

=> incompatibility in the code due to the new boolean flag

## GPGeodeticPoint

A new argument has been added to the constructor with a boolean that indicates if the name of the geodetic point will be displayed or not.

=> incompatibility in the code due to the new boolean flag

## CustomUS76, CustomMSISE2000

The ellipsoid used as an entry is now necessarily a [[PATRIUS](#)] [ExtendedOneAxisellipsoid](#) object and no more a [BodyShape](#) which is one of its interface.

=> may be some incompatibility in the code if the [BodyShape](#) interface was used

## Variable names

Some names changed in the XML files in order to be more consistent (for example, capitals vs lowercase letters).

=> some incompatibility with old XML files

## Anomaly corrections

- bad management of the clear function of the [GPVehicle](#) when it is not yet initialized
- problem in the [getLaw\(\)](#) method of the [GPSunPointingAttitudeLaw](#) class as the first argument when creating the [CustomSunPointing](#) object was the Sun. It implied that the second direction was normal to the satellite orbit rather than the poles axis as described.
- bad update of the units for the [GPDateOffset](#) widget.
- bug when the initial list of maneuvers was null.
- bug when a rotation was initialized