

# Maneuvers

De Wiki

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This tab deals with maneuvers definition. Of course, by default, no maneuvers are defined.

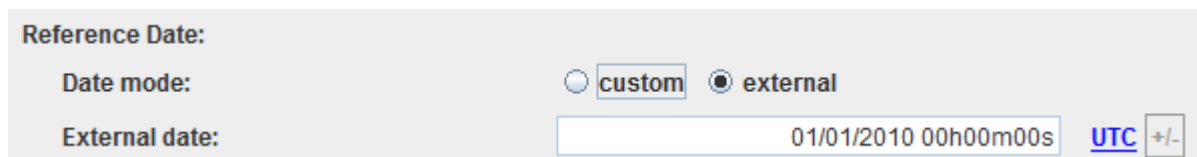
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## Reference date

First, the user will have to select a reference date, useful if the maneuvers will be later defined thanks to a duration relative to this date. There are two possibilities:

- “**custom**” : a specific date will be entered by the user
- “**external**” : in that case no modification of the date is available as it corresponds to the date defined in the initial orbit parameters (note that this date is automatically updated if the initial orbit date is modified).



Reference Date:

Date mode: ☐ custom ☒ external

External date:  [UTC](#)

## List of maneuvers

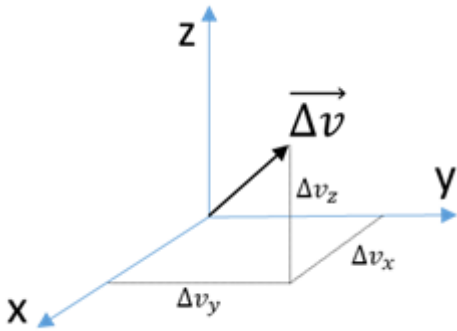
Then the user will have access to a list of maneuvers with all possibilities available with such lists (**adding, removing, moving, duplicating** ...). Each maneuver may be an impulsive or a continuous constant thrust one.

## Impulsive maneuver

The user will have to define:

- The name of the maneuver
- Since V11.4, the type of maneuver (standard or by orbital increment)
  - if standard type is chosen, we will have to give:
    - The frame in which the maneuver is defined
    - The maneuver components (Cartesian coordinates or a norm and two angles)
  - if it is by orbital increments:
    - on semi-major axis
    - on eccentricity (and semi-major axis eventually)

- on inclination (and semi-major axis eventually)



The components and the angles are related by: [math] \begin{cases} \Delta V\_x = \|\overrightarrow{\Delta V}\| \cos\beta \cos(\alpha) \\ \Delta V\_y = \|\overrightarrow{\Delta V}\| \cos\beta \sin(\alpha) \\ \Delta V\_z = \|\overrightarrow{\Delta V}\| \sin(\beta) \end{cases} [/math] where  $\alpha \in [0, 2\pi]$  and  $\beta \in [-\pi/2, \pi/2]$

- The orbital event that will trigger the maneuver (*be careful that the orbital event is not indefinite as AOL when inclination is equal to zero*)
- The engine used taken in the list defined in the vehicle characteristics tab
- The tank used taken in the list defined in the vehicle characteristics tab

**Maneuver1**

**Maneuver \***

**Maneuver Type** Impulsive ▼

**Name \*** Maneuver1

**Impulse maneuver**

**Type** Standard ▼

**Frame type \*** ☐ Local Orbital Frame ☒ Inertial Frame

**Inertial \*** EME2000 ▼

**Delta V \***

**Type of coordinates:** Custom - Angular coordinates ▼

**Alpha (around Z):** 0.0 deg

**Beta (above XY plane):** 0.0 deg

**Norm: \*** 10.0 m/s

**X Component:** 10.0 m/s

**Y Component:** 0.0 m/s

**Z Component:** 0.0 m/s

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**Maneuver Start event \***

**Type** Relative date ▼

☒ **Display event config**

**Relative Date Detector \***

**Relative date: \*** 35.0 s

☐ **Display expert config**

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**Engine \*** Engine1 ▼

**Fuel Tank \*** Fuel Tank1 ▼

## Constant thrust maneuver

The user will have to define:

- The name of the maneuver
- The frame in which the maneuver is defined
- The maneuver direction (Cartesian coordinates or two angles)
- The orbital event that will trigger the maneuver (*as for impulsive maneuver, be careful that the orbital event is not indefinite as AOL when inclination is equal to zero*)
- The criteria to end the maneuver (by duration or thanks to another orbital event).
- The engine used taken in the list defined in the vehicle characteristics tab
- The tank used taken in the list defined in the vehicle characteristics tab

**Maneuver2**

**Maneuver Type \*** Continuous ▼

**Name \*** Maneuver2

**Constant maneuver**

**Frame type** ☒ Local Orbital Frame ☐ Inertial Frame

**LOF** LVLH ▼

**Acceleration direction \***

**Type of coordinates:** Custom - Angular coordinates ▼

**X Component:** -1.0

**Y Component:** 1.22464679914735E-16

**Z Component:** 0.0

**Alpha (around Z): \*** 180.0 deg

**Beta (above XY plane):** 0.0 deg

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**Maneuver Start event \*** AOL ▼

☒ Display event config

**AOL Detector \***

**AOL: \*** 180.0 deg

**Type: \*** true ▼

**Frame: \*** GCRF ▼

**Start at occurrence: \*** 1

☐ Display expert config

**Stop maneuver: \*** ☐ duration ☒ event

**Maneuver End event** DATE ▼

☒ Display event config

**Date Detector**

**Date:** 01/01/2000 00h00m00s UTC +/-

☐ Display expert config

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**Engine \*** Engine1 ▼

**Fuel Tank \*** Fuel Tank1 ▼

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