

SYSTEMA NEWSLETTER

We are delighted to present the **first issue** of our newsletter ! This **Systema newsletter** will present our **latest news, new features** as well as **tips & tricks** and many others.

SYSTEMA 4.9.3 VERSION AVAILABLE !

Systema 4.9.3 release is **available** !

For further details, please refer to the release note and the user manual available on our **website** by clicking [here](#).

To download the version, do not hesitate to [contact our support team](#).

As a reminder, **4.9.2.P1** (Long Term Support) is also available.

Do not hesitate to **come visit us** !

CONQUER JUPITER WITH JUICE

On April 14, 2023, the **European Space Agency (ESA)** successfully launched the prestigious **JUICE** (Jupiter Icy Moons) mission to study Jupiter, the largest planet in our solar system, as well as its icy moons: Ganymede, Europa and Callisto. JUICE is the first mission strictly dedicated to the study of these celestial bodies of Jupiter and will make it possible to understand their evolution, the potential presence of liquid water and the conditions favorable to extra-terrestrial life.

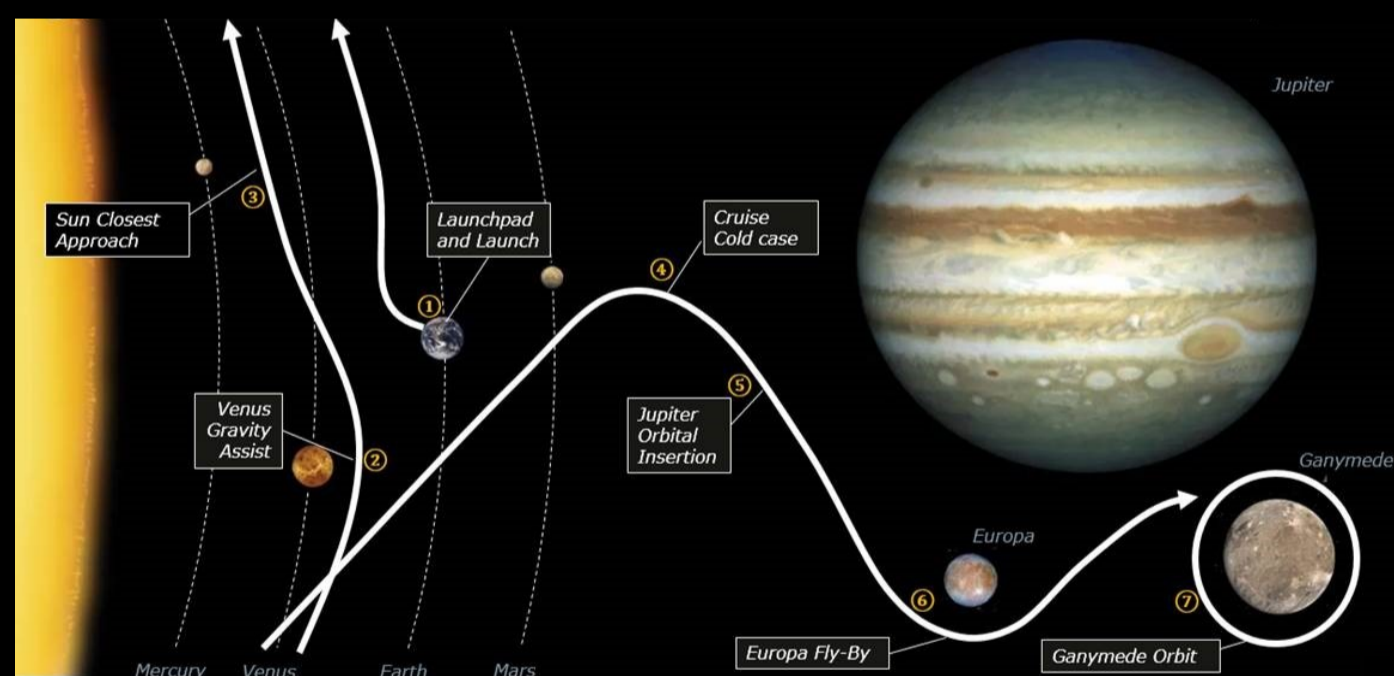
The **key tool** used to carry out the validation of the thermal control of JUICE is the **Systema software**, which made it possible to simulate the entire life of the satellite in order to ensure that the thermal protections are sufficient to protect the electronics and the scientific instruments.

Systema proved to be an essential tool in this mission to model the conditions in space and also to be perfectly sure that the design is sufficient to allow the proper functioning of the equipment. Systema's orbitography module has made it possible to model and study several key phases of **JUICE's extraordinary trajectory**: Launch and Early Operation Phase, Venus Gravity Assist, Sun Closest Approach, Cruise cold case, Jupiter Orbital Insertion, Europa Fly By and Ganymede Orbit.

To do this, a thermal model was built and gradually made more complex in order to reach **25,000 thermal nodes**. For each of these nodes were then calculated at each time of the mission: the temperature, the heat exchanges with the neighboring nodes, the power dissipated by the node, the behavior of the heating lines and the exchanges with the cold space as well as the planets and the sun.

This model has been **validated and correlated** with the results of thermal tests carried out at ESTEC (ESA test center). Systema has therefore made it possible to define a model that correctly represents reality and therefore a design that complies with the specifications for the mission. As JUICE continues on its way to Jupiter, Systema continues to be used to ensure that maneuvers not originally planned are thermally acceptable. When the satellite is in a thermally stabilized state, a final comparison between the in-flight measurements and the model results will be carried out, again, **using Systema**.

We are very proud to be part of this **incredible adventure**!



SPOTLIGHT EVENTS

ESPC

The Systema team was present for the first time at the thirteenth edition of the **ESPC** from October 2 to 6 in Elche, Spain!

The **European Space Power Conference** aims to address all topics of electrical power for space applications.

Systema therefore presented **Systema Power**. Power is an application of Systema dedicated to compute in-orbit power performances and assist system power budget design.

The presentation was given by a member of our team as well as an internal user, allowing us to present purely software point of view as well as a direct user point of view.

ESTEWS

Systema was also present at **ESTEWS** (European Space Thermal Engineering Workshop) from October 10 to 12 in the Netherlands.

The objective of ESTEWS is to discuss **thermal issues**.

Systema therefore had the opportunity to present its flagship application: **Thermica**. The goal was to present the **new features** of the application as well as the **roadmap**.