



SMALL
SATELLITES
& SERVICES
INTERNATIONAL
FORUM

#SSSIF2024
keynote speaker

INTERVIEW

JAVIER
VENTURA-TRAVESET

MOONLIGHT PROGRAMME NAVIGATION MANAGER
OF THE EUROPEAN SPACE AGENCY



SSSIF INTERVIEWER

Dr. Javier Ventura-Traveset, Moonlight Programme Navigation Manager of the European Space Agency. Javier, thank you for being with us.

JAVIER
VENTURA-TRAVESET

Thank you very much. It's a pleasure..

SSSIF

What are your expectations for this year's SSSIF, now that it has established itself as a key event for New Space at European level?

JAVIER

SSSIF has indeed become a reference event in Europe for the New Space industry, and I am very interested in attending. Moreover, this year's theme, "Lunar & Cislunar Missions & Business", is an additional reason for me, as I am involved in ESA in the development of the Moonlight system, a satellite communication and navigation infrastructure in lunar orbit that will be key to the development of the lunar economy. Moonlight will contribute to the extraordinary paradigm shift in lunar exploration that we are all observing.

SSSIF

You will be the keynote speaker on the second day. Can you give us a preview of the main lines of your speech?

JAVIER

My presentation will focus on future lunar navigation services and ESA's vision in this field over the next 10-15 years. I will talk in some detail about the Lunar Pathfinder and Moonlight programmes. With the Lunar Pathfinder satellite, in addition to providing a first commercial data service for lunar missions from 2026, we will demonstrate the first ever demonstration of reception and positioning in lunar orbit using GPS and Galileo, thanks to an extremely sensitive receiver and an algorithmic strategy that combines GPS and Galileo measurements with dynamic orbital information. With Moonlight, we will go one step further. We will establish a dedicated constellation of navigation and communication satellites in lunar orbit, which will represent an extraordinary paradigm shift in lunar exploration. I will address these issues in some detail, discussing the performance levels we expect to achieve, the possible applications and enhancement services we can envisage, as well as our expectations for reusing these technologies on Mars in the future.

SSSIF

ESA rightly places emphasis on the dissemination of space culture among children and young people. It is important to make society as a whole aware of the advances that the space race is bringing us, isn't it?



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JAVIER

Indeed, it is essential. The space sector is now present in all facets of our economy and our lives, with more than a hundred countries actively engaged in space activities. The direct economic impact of the space sector is currently around \$400 billion, almost doubling in the last decade. If we consider its indirect impact on the global economy, the figures are much higher. For example, it is estimated that approximately 10% of the European Union's GDP depends on the availability of satellite navigation services.

It is important that society is aware of these figures and that we are able to explain clearly the importance of this sector and the interest of investing in it. And, as you also rightly point out, we must not forget the inspirational effect that space missions have on our young people and children. Many of our missions are exciting, they invite you to dream, becoming an essential driving force in the creation of new scientific and engineering vocations among young people, which is crucial in today's world. At the European Space Agency, we have an office dedicated to education, and we attach great importance to this issue.

SSSIF

What is the current status of the planned Moonlight lunar communication and Navigation System? When will it be operational?

JAVIER

Following the approval of the Moonlight programme at the last ministerial meeting, we are starting the implementation phase of the system this year. The first operational services of the Moonlight system should be available from 2028, with a lunar communication service that we intend to use in support of the Artemis programme and for the development of the lunar economy. In the same year, we plan to launch the first lunar navigation satellite in the Moonlight constellation, which will enable us to validate the performance of the future service and thus to deploy the full system in 2030, which we call FOC (Full Operational Capability).

SSSIF

Will this system be compatible and interoperable with other similar lunar initiatives by other partner agencies, such as NASA and JAXA?

JAVIER

This is a very important issue. All our systems will be developed according to common standards that we have jointly defined, called LunaNet. This will allow our systems to be fully interoperable. This is essential, as it means that the same receiver will work well with all our lunar systems and, moreover, will be able to use several of them at the same time, benefiting from improved availability and accuracy. This is a key issue in which I am directly involved as ESA's representative in working groups with NASA and the Japanese space agency, JAXA.



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SSSIF How may this change the business opportunities for small satellites for lunar and cislunar missions?

JAVIER The availability of a dedicated, commercial communication and navigation infrastructure in lunar orbit is an extraordinary support for the development of the lunar economy. Thanks to Moonlight, new lunar missions will no longer need, as in the past, the support of major space agencies to navigate or communicate with the ground, with the associated costs and complex ground-based infrastructures. Thanks to Moonlight, new missions will only need to put simple receivers on board and contract the service, which will be much cheaper. Lunar users will thus have data, audio and video streaming communication services, the ability to position themselves in orbit very easily, to land much more safely and to navigate accurately on the lunar surface.

SSSIF Javier, we look forward to hearing from you in Malaga really soon. Thank you very much.

JAVIER Thank you.