

AUGUST 2021  
PRESS KIT  
VV19



# MISSION DESCRIPTION

Arianespace's seventh launch of 2021 with the second Vega of the year will place its satellite passengers into Sun-synchronous orbit. The launcher will be carrying a total payload of approximately 1 029 kg.

The launch will be performed in Kourou, French Guiana.



## DATE AND TIME

Liftoff is planned on **Monday, August 16, 2021**, at exactly:

- 09:47 p.m. Washington, D.C. time,
- 10:47 p.m. Kourou time,
- 01:47 a.m. Universal time (UTC), August 17,
- 03:47 a.m. Paris time, August 17,
- 10:47 a.m. Tokyo time, August 17.



## MISSION DURATION

The nominal duration of the mission (from liftoff to separation of the satellites) is:  
1 hour, 44 minutes and 59 seconds.



## SATELLITES

Satellite: **Pléiades Neo 4**  
Customer: Airbus Defence and Space - Intelligence



Satellites: Four auxiliary payloads



## TARGETED ORBIT

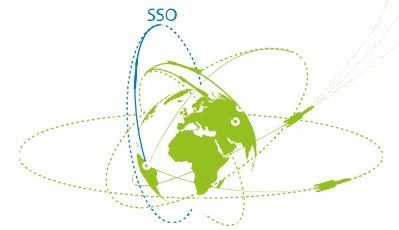
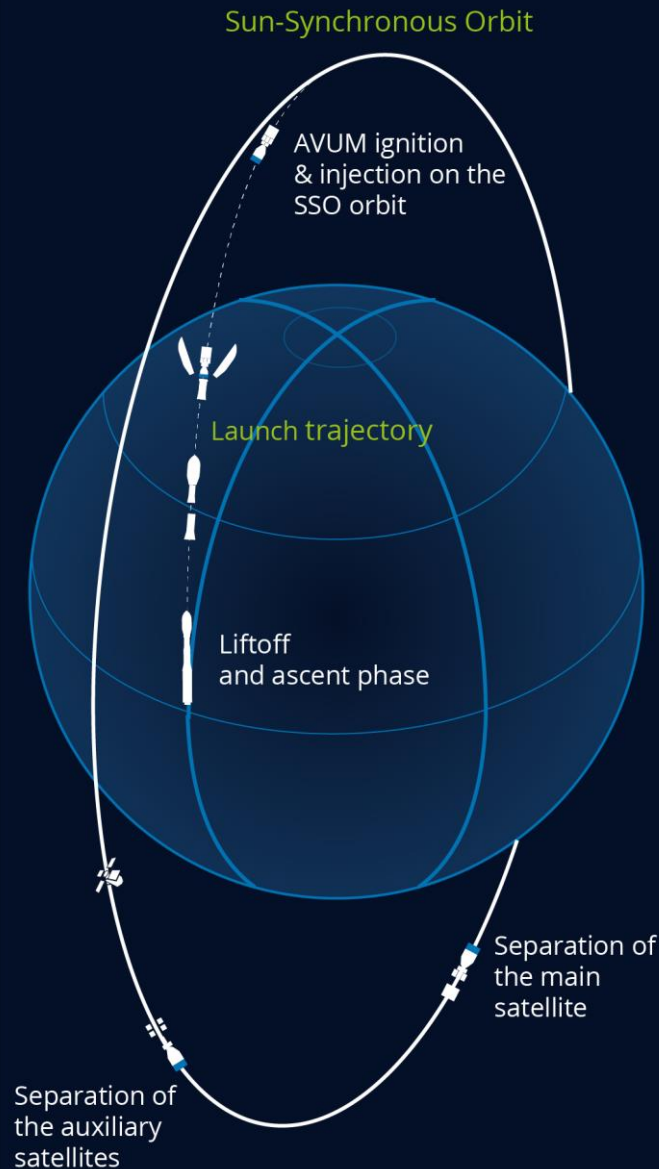
For Pléiades Neo

- Perigee altitude: **614 km**
- Apogee altitude: **625 km**
- Inclination : **97.89 degrees**

For the four auxiliary payloads

- Perigee altitude: **540 km**
- Apogee altitude: **554 km**
- Inclination : **97.55 degrees**

## VEGA STANDARD SUN-SYNCHRONOUS ORBIT



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# PLÉIADES NEO 4

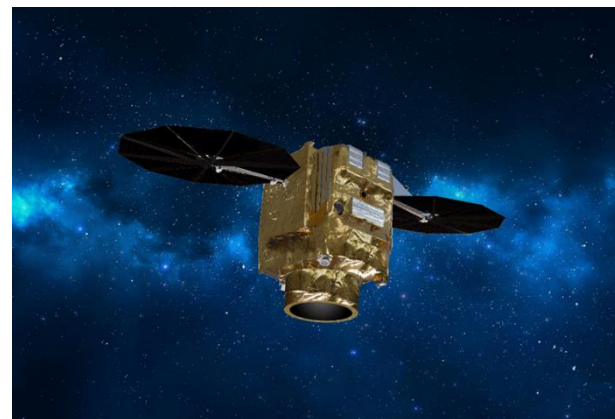
## THE FIRST EUROPEAN EARTH OBSERVATION CONSTELLATION AT 30 CM RESOLUTION



### DID YOU KNOW ?

First Pléiades Neo constellation satellites have been achieved within only five years, thanks to the hard work of over 500 people, across seven sites in Europe, to deliver first-class 14 km swath imagery at 30 cm native resolution, capable to daily collect up to 2 million km<sup>2</sup> and image the entire Earth landmass five times per year.

<b>SATELLITES</b>	Pléiades Neo 4
<b>CUSTOMER</b>	Airbus Defence and Space – Intelligence
<b>MANUFACTURER</b>	Airbus Defence and Space
<b>MISSION</b>	Earth observation
<b>MASS AT LAUNCH</b>	922 kg (925 kg max)
<b>PLATFORM</b>	S950 optical
<b>COVERAGE AREA</b>	Global (up to 2 million km <sup>2</sup> per day)
<b>LIFETIME</b>	10 years (nominal)



**Pléiades Neo 4** is the second of four satellites of the Pléiades Neo constellation to be launched. Entirely funded, manufactured, owned and operated by Airbus, Pléiades Neo is a breakthrough in Earth observation domain.

With 30 cm native resolution, best-in-class geolocation accuracy and twice-a-day revisit, the four Pléiades Neo satellites unlock new possibilities with ultimate reactivity. Thanks to these state-of-the-art satellites, each step of the acquisition and delivery cycle offers top-level Earth observation services now and going forward for the next ten years. In addition, their reactive tasking ability allows urgent acquisitions 30 to 40 minutes following request - which is five times higher than previous constellations - and respond to the most critical situations in near real-time, very useful for natural disaster.

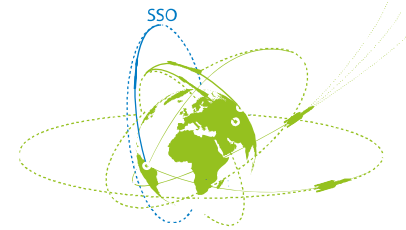
The Pléiades Neo constellation is 100% commercially available and will provide institutional and commercial customer's needs. Images captured by Pléiades Neo will be streamed into the OneAtlas on-line platform, allowing customers to have immediate data access, analytics and correlation with Airbus' unique archive of optical and radar data.

- Pléiades Neo 4 will be the second satellite to be launched by Arianespace for Airbus Defence and Space Intelligence as an operator. There is one additional Airbus Defence and Space Intelligence mission, for two satellites to be launched on Vega C in the Arianespace backlog.
- Pleiades Neo 4 will be the 133<sup>rd</sup> Airbus Defence and Space satellite to be launched by Arianespace. There are currently 18 Airbus satellites in Arianespace's backlog. In addition, Airbus is involved in the construction of the OneWeb satellites being deployed by Arianespace.



# THE FOUR AUXILIARY PAYLOADS

## THE VARIOUS MISSIONS OF THE CUBESATS



### DID YOU KNOW?

These small satellites will be carried as auxiliary payloads via two deployers integrated on the payload adapter of Pléiades Neo 4. By using this accommodation for the first time, Arianespace accurately meets the demand of its customers. The Vega launcher offers great flexibility as its structure adapts to customer needs.

Three of the four auxiliary payloads are under contract of SAB Launch Services, who was responsible for the integration into the two deployers for all the four CubeSats. SAB-LS is an Italian company part of SAB Group created to offer “end to end” launch services to smallsats (with special focus on CubeSats) on Vega and Vega C multi payload missions.



BRO-4 on behalf of Unseenlabs

**BRO-4** (Breizh Reconnaissance Orbiter), a 6U CubeSat, is the fourth satellite of the Unseenlabs constellation dedicated to interception of radiofrequency signals from space. Using its own on-board technology based on the identification of electromagnetic signals from vessels, Unseenlabs is able to geolocate and characterize any ships at sea. The deployment of the constellation will comprise between 20 and 25 nano-satellites by 2025.

- BRO-4 will be the first satellite to be launched by Arianespace for Unseenlabs.
- BRO-4 will be the first GomSpace satellite to be launched by Arianespace.



SUNSTORM on behalf of ESA

**SUNSTORM** is a 2U CubeSat. It will fly an innovative solar X-ray spectrometer to detect the X-ray pulses produced by coronal mass ejections – massive eruptions of many millions of tons of material from the Sun's surface. This can lead to solar storms threatening, potentially harmful effects on satellites and terrestrial power and communications networks.

- SUNSTORM will be the first Reaktor Space Lab Finland satellite to be launched by Arianespace.
- SUNSTORM will be the 58<sup>th</sup> mission (80<sup>th</sup> satellite) to be launched by Arianespace for ESA. There are seven additional ESA missions (for nine satellites) in the Arianespace backlog.

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#### REAKTOR SPACE LAB

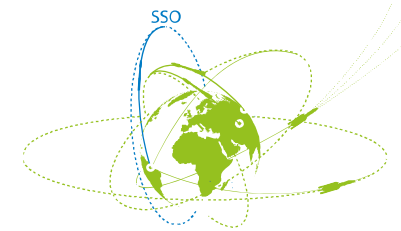
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# THE FOUR AUXILIARY PAYLOADS

## THE VARIOUS MISSIONS OF THE CUBESATS

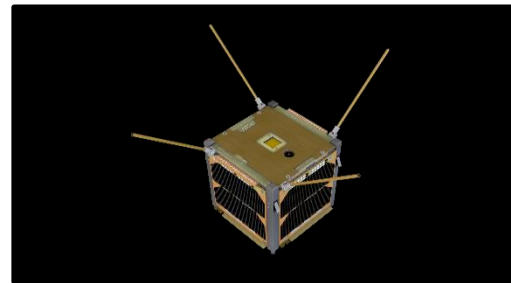


### DID YOU KNOW?

In order to address the needs of a growing number of smallsats projects, Arianespace is now offering a tailored, standardized launch service for SmallSats and CubeSats, with regular rideshare missions on Vega and Vega-C, in addition to some piggyback opportunities.

A first “Proof of Concept” rideshare mission on Vega successfully took place on 02 September 2020 with a total of 53 SmallSats/CubeSats. Vega also orbited six SmallSats earlier this year on 28 April 2021.

Funded by the European Space Agency (ESA), Arianespace’s Small Spacecraft Mission Service (SSMS) will soon be joined by the Multiple Launch Service (MLS), a similar offering that uses the Ariane 6 launch vehicle. With these two services, Arianespace can offer a wide range of affordable launch opportunities for small satellites and constellations.



LEDSAT on behalf of ESA

The **LEDSAT** 1U CubeSat is a mission developed by the University of Sapienza with the support of the Italian Space Agency and as part of the IKUNS programme in collaboration with University of Michigan. The mission is realized within the ESA's Fly Your Satellite! programme and is an educational project conceived to investigate the performances of a technology based on Light Emitting Diodes (LEDs) to easily identify and track the satellite while in-orbit, in particular for: optical identification of the spacecraft, orbit determination, attitude reconstruction, and back-up light-based communication. This project is a hands-on educational programme which enables the transfer of ESA expertise to University students while facilitating them in building, testing and launching their own CubeSats.

- LEDSAT will be the second La Sapienza satellite to be launched by Arianespace.
- LEDSAT will be the 60<sup>th</sup> mission (82<sup>nd</sup> satellite) to be launched by Arianespace for ESA. There are seven additional ESA missions (for nine satellites) in the Arianespace backlog.



RADCUBE on behalf of ESA

**RADCUBE** is a 3U CubeSat joint mission with international consortium to demonstrate miniaturized instrument technologies that measure in-situ the space radiation and magnetic field environment in Low Earth Orbit for space weather monitoring purposes. RADCUBE will establish a space weather monitoring satellite system, which provides space weather forecast service for companies and organizations operating telecommunication infrastructure, energy transfer systems, or spacecraft. The platform developed by C3S will also be demonstrated in flight.

- RADCUBE will be the first C3S Hungary satellite to be launched by Arianespace.
- RADCUBE will be the 59<sup>th</sup> mission (81<sup>st</sup> satellite) to be launched by Arianespace for ESA. There are seven additional ESA missions (for nine satellites) in the Arianespace backlog.

#### ESA - LEDSAT

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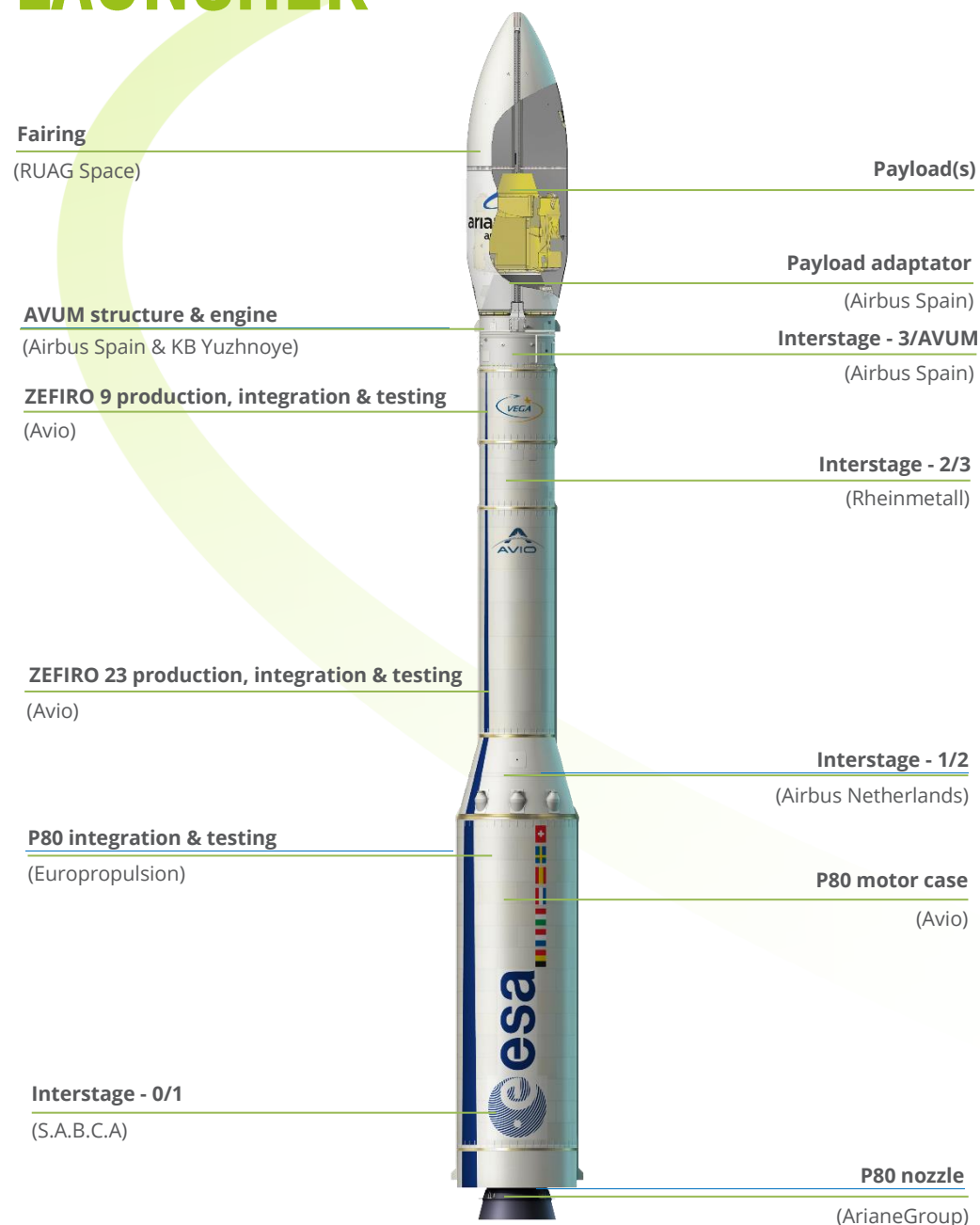
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# VEGA LAUNCHER



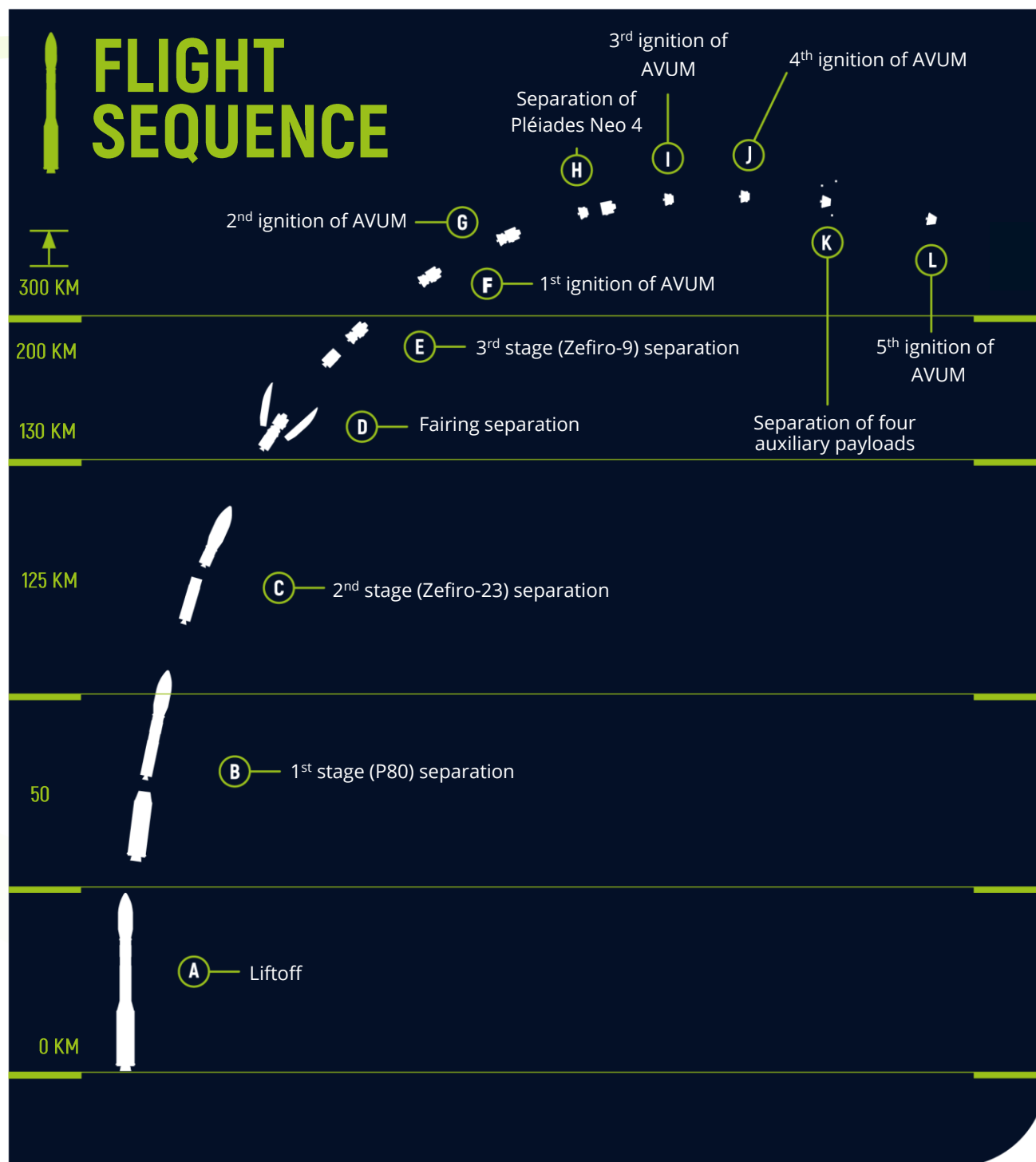
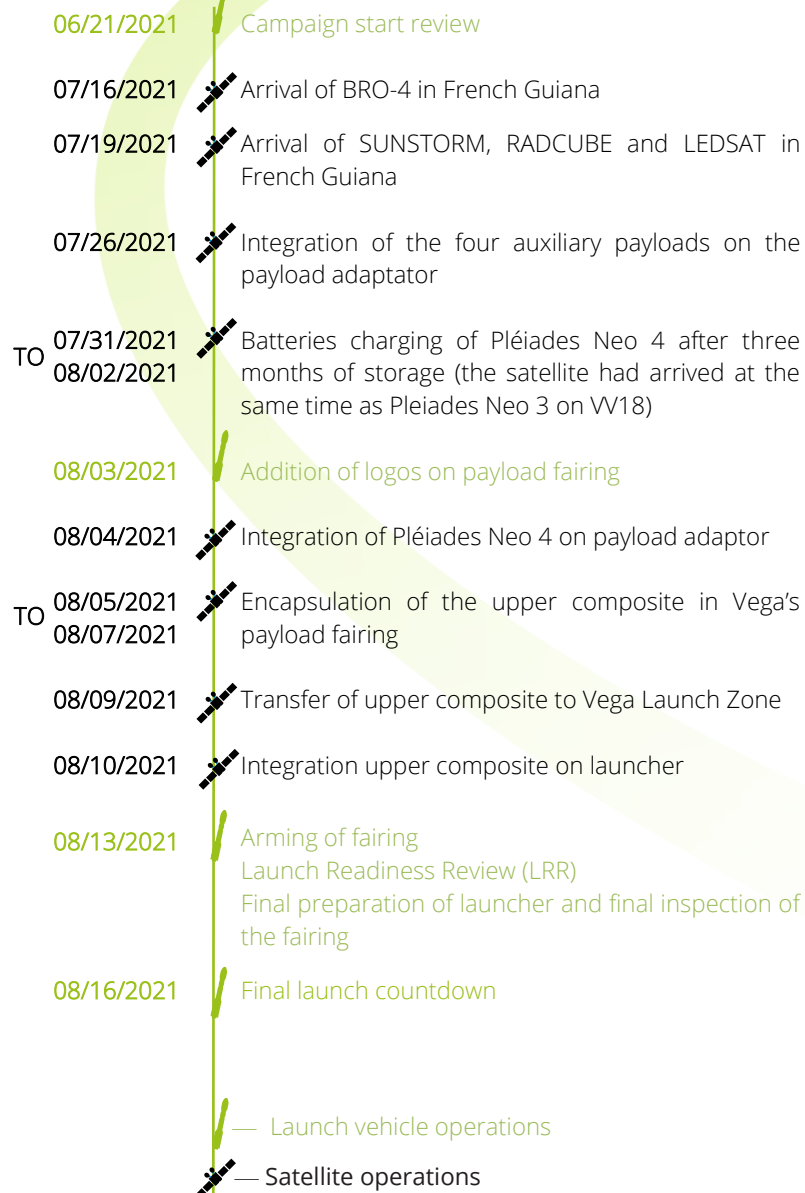
## DID YOU KNOW ?

Vega is the Arianespace launch vehicle designed to send small satellites into Low Earth Orbit (LEO). It provides great flexibility of mission at an affordable cost. Together with the Ariane launcher family, it represents the European solution for space accessibility.

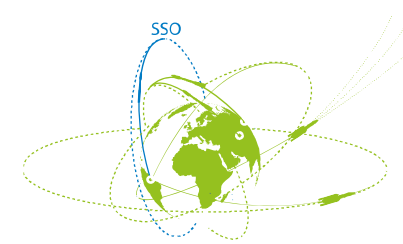
The rocket consists of four stages, the first three equipped with solid propellant motors and the last one using liquid propulsion. It can carry multiple payloads at a time in any orbit up to 1,500 kg on missions to a 700-km circular orbit.

The Vega's maiden flight took place in February 2012. Following the success of this first launch, the project has grown in importance and the launcher has gained a very good track record of successful flights, putting various types of cargo into orbit, including numerous SmallSats for various private, institutional and government customers.

# LAUNCH CAMPAIGN



# STAKEHOLDERS OF A LAUNCH



## ARIANESPACE

Arianespace uses space to make life better on Earth by providing launch services for all types of satellites into all orbits.

It has orbited over 940 satellites since 1980, using its family of three launchers, Ariane, Soyuz and Vega, from a launch site in French Guiana (South America) and the Russian cosmodromes in Baikonur and Vostochny.

Arianespace is already marketing Europe's new launchers, Ariane 6 and Vega C.

Arianespace is headquartered in Evry, near Paris, and has a technical facility at the Guiana Space Center, Europe's Spaceport in French Guiana, plus local offices in Washington, D.C., Tokyo and Singapore. Arianespace is a subsidiary of ArianeGroup, which holds 74% of its share capital, with the balance held by 15 other shareholders from the European launcher industry.



## AVIO

Avio is a leading international group engaged in the construction and development of space launchers and solid and liquid propulsion systems for space travel. The experience and knowhow built up over more than 50 years puts Avio at the cutting edge of the space launcher sector, solid, liquid and cryogenic propulsion and tactical propulsion. Avio operates in Italy, France and French Guiana with five facilities, employing approx. 1,000 highly-qualified personnel, of which approx. 30% involved in research and development. Avio is a prime contractor for the Vega program and a sub-contractor for the Ariane programme, both financed by the European Space Agency ("ESA"), placing Italy among the limited number of countries capable of producing a complete spacecraft. Avio also manufactures the forthcoming Vega C launcher and participates in the development of the Ariane 6 launcher thanks to its new solid propellant engines P120C and the Vinci and Vulcain liquid oxygen turbopumps.



## EUROPEAN SPACE AGENCY

The European Space Agency (ESA) is tasked with guiding the development of Europe's space capabilities and making sure that its investments in space benefit the citizens of Europe and worldwide. An international organization with 22 member states, ESA coordinates its members' financial and intellectual resources to conduct programs and activities that largely surpass the scope of action of a single European state. ESA manages the development of Europe's future space transportation programs, including Ariane 6 and Vega C. On Vega, ESA manages the overall program, while European industry builds the launch system, with AVIO as prime contractor. ESA Member States fund almost two thirds of the total cost of running and maintaining the launch range at Europe's Spaceport. ESA owns the Ariane 5, Vega, and Soyuz launch complexes, which are operated by Arianespace.

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## CNES

French space agency CNES (Centre National d'Etudes Spatiales) defines national space policy and proposes it to public authorities. CNES oversees the application of this policy in five main areas: Ariane, science, observation, telecommunications and defense.

ESA chose CNES as prime contractor for the Ariane 6 launch base in French Guiana, including the construction of a new launch pad and development of the existing installations at Europe's Spaceport.

CNES also supports ESA, as the contracting authority, and ArianeGroup, as prime contractor for launcher development, and is responsible for applying the French law on space operations.

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