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DECEMBER 2021

PRESS KIT

VS26

www.arianespace.com

www.starsem.com

MISSION DESCRIPTION

Arianespace's 13th launch of 2021 with the 8th Soyuz of the year will place its satellite passengers into medium Earth orbit. The launcher will be carrying a total payload of approximately 1645 kg.

The launch will be performed from Kourou, in French Guyana.

DATE AND TIME

Liftoff is planned on **Wednesday, December 1st,** at exactly:

- 07:31 p.m. Washington, D.C. time,
- 09:31 p.m. Kourou time,
- 00:31 a.m. Universal time (UTC), on December 2,
- 01:31 a.m. Paris time, on December 2,
- 03:31 a.m. Moscow time, on December 2.

MISSION DURATION

The nominal duration of the mission (from liftoff to separation of the satellites) is:
3 hours, 51minutes and 49 seconds.

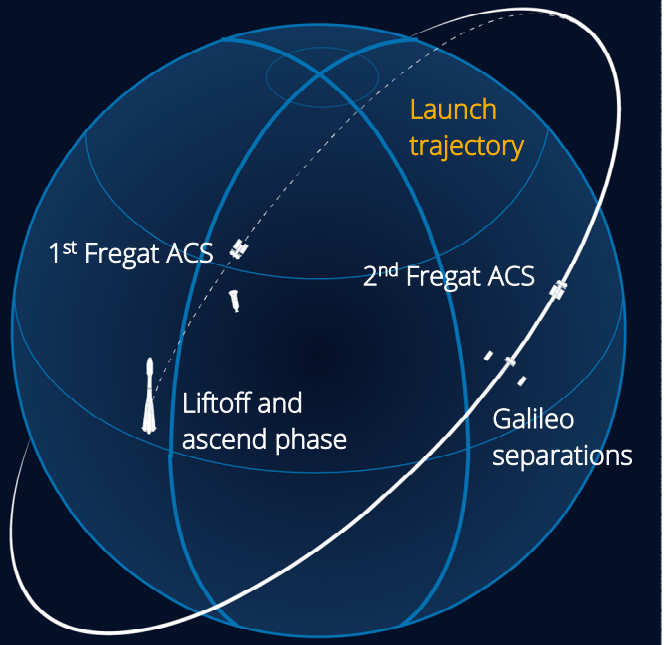
SATELLITES

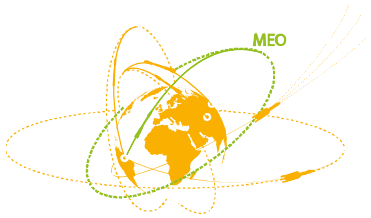
Satellites: Galileo FOC-M9 (23-24), SAT 27-28
Customer: ESA on behalf of European Commission

TARGETED ORBIT

- Semi major-axis : 29,900 km.
- Inclination: 57.09 degrees

MISSION ORBIT





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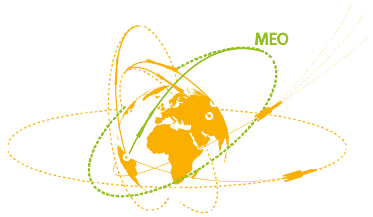
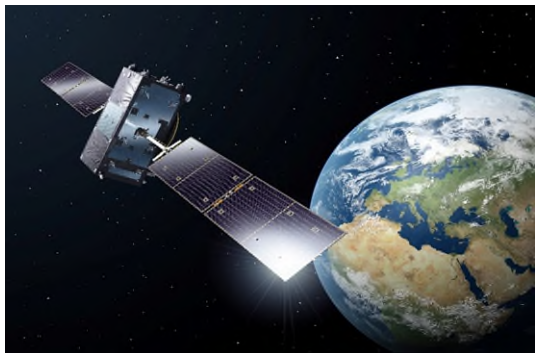
GALILEO FOC-M9 (23-24), SAT 27-28

THE LARGEST EUROPEAN UNION INFRASTRUCTURE INITIATIVE



DID YOU KNOW?

Galileo is an essential tool ensuring Europe and its citizens full independence in terms of sovereignty and strategic autonomy. Every day, more than 2.3 billion devices use Galileo's signals for a variety of applications such as car navigation systems, aviation, maritime, agriculture, public works or even for energy distribution infrastructures and more.



Arianespace will orbit two more satellites, Galileo FOC-M9 (23-24), SAT 27-28, bringing the Galileo constellation fleet to 28 satellites after the launch. This mission will be performed for the benefit of the European Space Agency (ESA) acting on behalf of the European Commission.

Galileo is the European global satellite navigation system, operational since 2016. It is the sole satellite navigation system operated under civilian control. It offers high-precision positioning, navigation and timing services to more than 2,3 billion users worldwide. By offering dual frequencies as standard, Galileo is set to deliver real-time positioning accuracy down to the meter range. Being the largest European Union (EU) infrastructure initiative, Galileo is bringing strategic autonomy and sovereignty to the EU citizens and its Member States. Funded and fully owned by the European Union, designed by ESA and operated by the EU agency for the Space Programme (EUSPA), it features innovative technologies developed by European industry for the benefit of all citizens.
The Galileo satellites are built by prime contractor OHB System, with the payloads supplied by UK-based Surrey Satellite Technology Ltd (SSTL), which is 99% owned by Airbus Defence and Space.

Out of 26 Galileo satellites already in orbit, 14 have been launched by Soyuz (produced by Progress Space Rocket Center, part of Roscosmos) between 2011 and 2016; and 12 by Ariane 5 between 2016 and 2018. VS26 will raise Galileo's total fleet to 28 satellites and it continues with tomorrow's flights onboard Soyuz and Ariane 62 to complete the first-generation deployment, starting with six additional Galileo FOC satellites, over the next years.

SATELLITES	Galileo FOC-M9 (23-24), SAT 27-28
CUSTOMERS	ESA on behalf of European Commission
MANUFACTURER	OHB
MISSION	Navigation
PLATFORM	Galileo dedicated

- Galileo FOC-M9 will be the 61st mission (83rd and 84th satellites) to be launched by Arianespace for ESA.
- Galileo FOC-M9 will be the 23rd and 24th FOC satellites to be launched by Arianespace for the European Commission.
- Thanks to Galileo FOC-M9, Arianespace has launched 150 missions (180 satellites) for European institutions.
- OHB, prime contractor of Galileo, is a reliant partner of Arianespace: Galileo FOC-M9 will be the 26th and 27th OHB satellites launched by Arianespace.

PRESS CONTACTS

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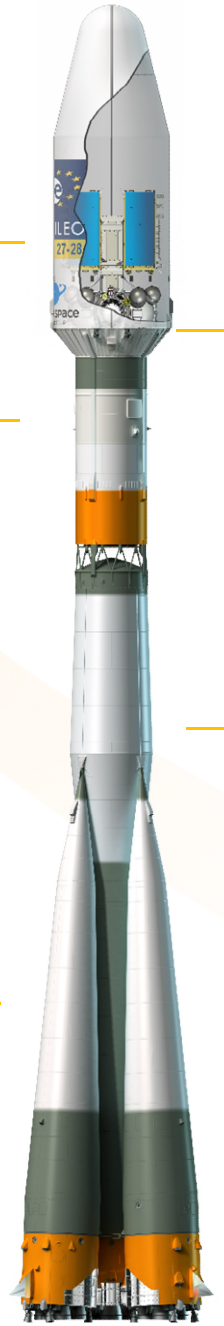
SOYUZ LAUNCHER



DID YOU KNOW?

The Soyuz launch vehicle family has provided reliable and efficient launch services since the start of space exploration. Soyuz rockets, which launched both the first artificial satellite and the first human into space, have performed more than 1,925 launches to date. Today, Soyuz is used for manned and unmanned flights to the International Space Station, as well as Russian government launches and commercial launches. Introduced in 1966, Soyuz has been the workhorse of the Soviet/Russian space program. As the only manned launch vehicle in Russia and the former Soviet Union, Soyuz meets very high standards of reliability and robustness.

The decision of the European Space Agency to introduce Soyuz launch capability at the Guiana Space Center (CSG) in French Guiana marked a major step forward in expanding the range of missions. With the introduction of Soyuz at CSG, this famed medium-lift Russian launch vehicle is now an integral part of the European launcher fleet, together with the heavy-lift Ariane 5 and the lightweight Vega. Offered exclusively by Arianespace to the commercial market for launches from CSG, Soyuz becomes Europe's standard medium launcher for both government and commercial missions.

The Soyuz version currently offered by Arianespace is a four-stage launch vehicle composed of: four boosters (first stage), a central core (second stage), a third stage, and the restartable Fregat upper stage (fourth stage). It also includes a payload adapter/dispenser and fairing.

LAUNCH CAMPAIGN

01/12/2021 — Final chronology and liftoff.

29/11/2021 — General dress rehearsal

27/11/2021 — Upper composite transfer to Soyuz Launch pad

24/11/2021 — Galileo FOC-M9 encapsulation under fairing

16/11/2021 TO 17/11/2021 — Galileo FOC-M9 integration on dispenser in S5A

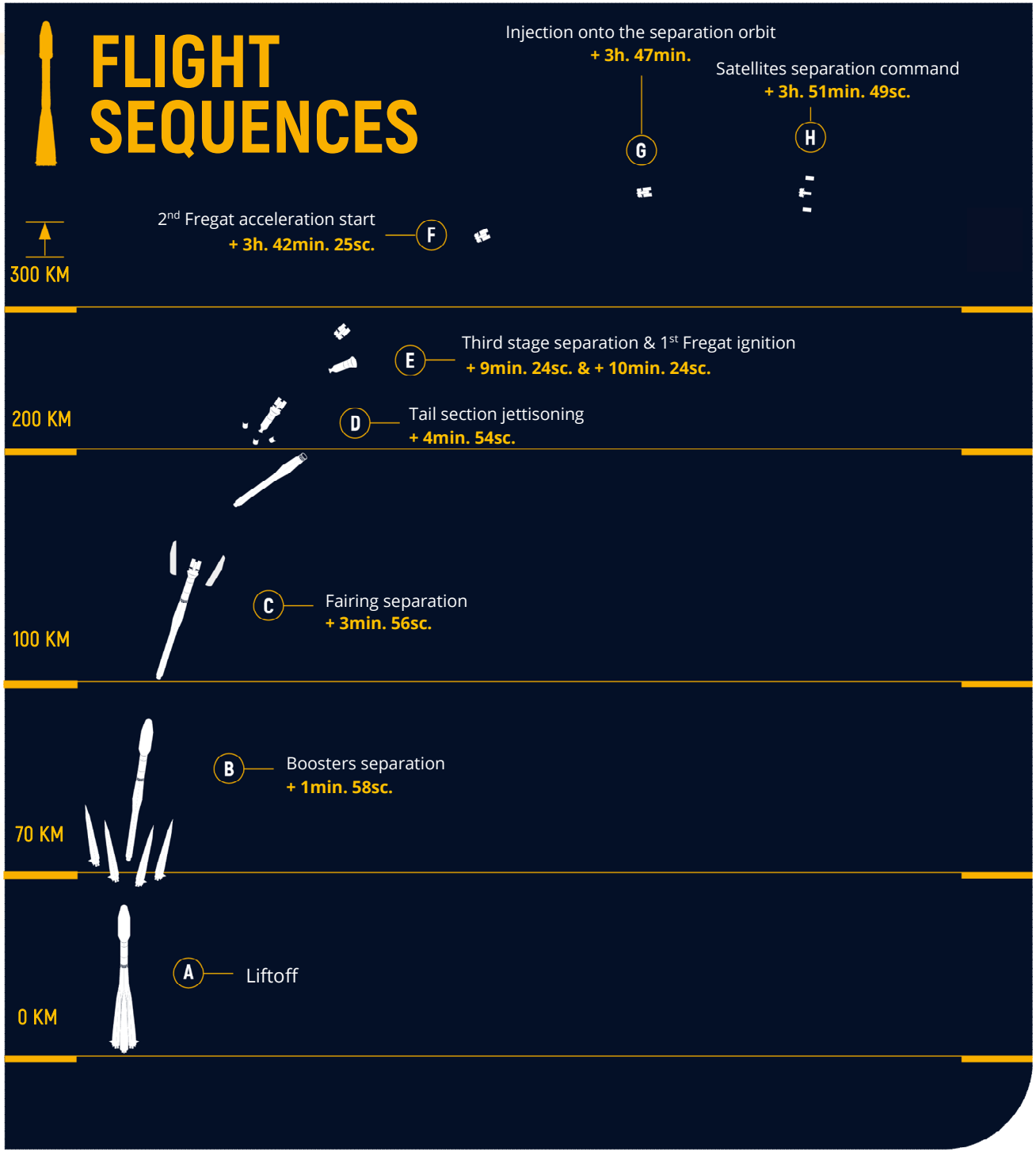
10/11/2021 — Galileo FOC-M9 fueling operations

07/10/2021 — Arrival of Galileo FOC-M9 in French Guiana and transfer by road to the Spaceport's S1A payload preparation facility

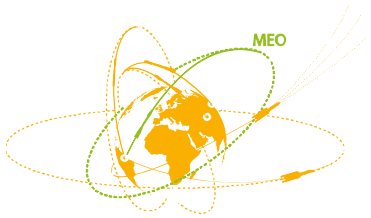
Launcher operations

Satellite operations

FLIGHT SEQUENCES



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.

ESA

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 country. ESA is now coordinating Europe's future launcher programs, Ariane 6 and Vega C. On Ariane 6, ESA supervises the overall launch system procurement and architecture, while European industry builds the launcher, with ArianeGroup as prime contractor and design authority.

ESA also provides the launcher's specifications for institutional missions. Thirteen European countries contribute to funding for the Ariane 6 program, led by France, Germany and Italy, along with Austria, Belgium, Spain, Ireland, Norway, the Netherlands, Romania, Sweden, Switzerland and the Czech Republic.

Press contact: media@esa.int

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. 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. As the owner of the Guiana Space Center (CSG), CNES has a dual mission: maintaining the operational condition of the CSG and modernizing its facilities in anticipation of the arrival of Ariane 6, Vega-C and other future vehicles. At the CSG, CNES manages operations at the launch base, the reception of satellites, launch vehicle monitoring and tracking, range security and environmental protection.

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ROSCOSMOS & RUSSIAN PARTNERS

ROSCOSMOS is a State Corporation that was established in August 2015 to oversee and implement a comprehensive reform of the Russian space industry. State Space Corporation ROSCOSMOS ensures the implementation of the Russian government's space program and its legal regulation. ROSCOSMOS is also placing orders for the development, manufacture and supply of space equipment and space infrastructure objects. The state corporation is also responsible for international space cooperation and tasked with setting the stage for the future use of results of space activities in the social and economic development of Russia.

Glavkosmos is responsible of the launch campaign planning, and all associated activities of the Russian partners linked with the launch campaign. RKTs-Progress (the Samara Space Center) is responsible for the design, development, and manufacture of launch vehicles, including the Soyuz launch vehicle's first, second, third stages and fairing. It also integrates vehicle stages and handles flight operations. NPO Lavochkin manufactures and integrates the Fregat upper stage, and is responsible for its launch operations. TsENKI is in charge of the launch campaign and the final chronology, and the provision of associated services, including systems engineering, the design, and technical and operational management of the launch pad and associated facilities dedicated to the Soyuz launcher.

Press contact: info@roscosmos.ru