

# First Soyuz to Fly From French Guiana

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A Soyuz rocket standing in position on the launch pad at the Guiana Space Center in Sinnamary, French Guiana. **Benoit Tessier**

PARIS — A Russian Soyuz rocket will blast off from French Guiana on Thursday in a new East-West partnership designed to redraw commercial competition in space.

The scheduled liftoff is the first time that a Soyuz, which first flew in 1966 and traces its roots back even further to the earliest Cold War intercontinental ballistic missiles, has been launched from outside its former Soviet bases.

Aboard the Soyuz will be the first two satellites in Europe's Galileo global positioning satellite constellation.

Once fully operational later this decade, the system aims to give Europeans autonomy from the U.S. government-controlled Global Positioning System. Russia says it completed its own similar system, Glonass, earlier this month.

The launch follows years of delays and budget disputes over Galileo, as well as almost a decade of discussions since France and Russia agreed to cooperate on Soyuz launches

in 2003.

The Soyuz rocket has been adapted to allow European space launch company Arianespace, which operates the Ariane-5 space juggernaut, to lift midsized 3.2-ton payloads into orbit.

Moscow is expected to receive tens of millions of dollars for each launch to help finance its own space activities, while the presence of Russian rockets at the European launchpads at Kourou near the equator will help Arianespace cut costs.

"We are at the end of one episode [in our space business] and at the beginning of another," Arianespace chief executive Jean-Yves Le Gall said.

"Soyuz will launch medium-sized satellites that could not be launched by Ariane-5. Soyuz will permit us to launch more often from Guiana. ... Soyuz decreases Ariane-5 launch costs because fixed costs at the launch site in Guiana will be spread out through a larger number of launches," Le Gall said.

Arianespace is principally owned by the French Space Agency, or CNES, with 34 percent and Astrium, a wholly owned subsidiary of European aerospace giant EADS, holding 30 percent.

It is best known for the Ariane-5 that ferries the biggest satellites. But a market for medium satellites is also gaining.

The arrival of Russian rockets in France's pied-a-terre on the northeast coast of South America is slated to give Arianespace another vehicle in its effort to maintain its lead launching commercial satellites.

## **Rocket Failure**

Soyuz was the pride of the Soviet Union's space program. The rocket was to have been an integral component in its effort to beat America to the moon during the space race of the 1960s.

Now the Saturn rockets and Apollo capsules that got America to the moon first, and its retired shuttle fleet that supplied the International Space Station, are all museum pieces.

But Soyuz continues and recently conducted the 1,776th launch in its career, making it by far the most used rocket in space history.

Arianespace is going ahead with this week's launch despite the failure of a Soyuz rocket that led to the crash of an unmanned cargo craft in August.

It has said the Soyuz version that failed was of a different series than the one slated for launch this week.

But two models of the faulty series are in French Guiana for future missions, and their upper stages will be sent back to Russia for inspection, repair or possible replacement.

Soyuz is built by the Federal Space Agency at the Samara Space Center and is shipped by train

and sea to French Guiana.

The space base there is only 5 degrees north of the equator, and this represents a significant bonus for Soyuz.

Equatorial launchpads give an advantage especially for launching communications satellites into geostationary orbit, by using a slingshot effect linked to Earth's rotation.

Arianespace is not alone in turning to Russian rockets to lower costs and competition for commercial launches is fierce.

Its main rival, International Launch Services, a U.S.-Russian joint venture that launches Russian Proton rockets, uses Yury Gagarin's launch base of Baikonur, Kazakhstan, as its springboard.

A Russian-owned competitor, Sea Launch, launched a European telecom satellite last month from a converted oil rig launch pad in the Pacific Ocean using a Soviet-era Zenit rocket.

China's Long March rocket recently launched a satellite for Paris-based Eutelsat. But the launch, the first Western satellite hoisted by China since the 1990s, is unlikely to be repeated soon since most satellites have American components that are governed by tough U.S. export restrictions.

American startups like SpaceX — brainchild of PayPal founder Elon Musk — aim to poach business from Ariane and ILS using the Falcon rocket series, but are still in a test phase.

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