FLIGHT VA253: ARIANESPACE WILL ORBIT GALAXY 30 / MISSION EXTENSION VEHICLE-2 FOR INTELSAT; AND BSAT-4B FOR MAXAR AND BROADCASTING SATELLITE SYSTEM CORPORATION (B-SAT) AS A FINAL CUSTOMER

For its fifth launch of 2020, Arianespace will orbit two telecommunications satellites (Galaxy 30 and BSAT-4b) and one life extension vehicle (Mission Extension Vehicle-2 or MEV-2) using an Ariane 5 launch vehicle from the Guiana Space Center.

With this 253rd Ariane mission, Arianespace once again serves the ambitions of leading satellite operators by contributing to the improvement of life on Earth.

Galaxy 30 / Mission Extension Vehicle-2

The Galaxy 30/MEV-2 is a Northrop Grumman Corporation program combining two satellites stacked together: Intelsat’s Galaxy 30 and Mission Extension Vehicle-2 for SpaceLogistics LLC, a satellite servicing vehicle which will dock initially with Intelsat 10-02 (IS-10-02).

Galaxy 30 (G-30) will be the first replacement satellite in Intelsat’s North American Galaxy fleet refresh. It will provide high-performance broadcast distribution capabilities, including Ultra-High Definition (UHD), while also supporting broadband, mobility and enterprise network solutions.

The launch of G-30 demonstrates Intelsat’s long-term commitment to its media customers and its media distribution neighborhoods, which have an unmatched penetration of cable headends in the United States.

- Galaxy 30 will be the 62nd satellite launched by Arianespace for Intelsat.
- Galaxy 30 will be the 29th Northrop Grumman satellite launched by Arianespace.

MEV-2 is supplied by Northrop Grumman for the company’s wholly owned subsidiary, SpaceLogistics LLC. Intelsat 10-02 will be the first customer for the MEV-2. Once docked, it will control the satellite’s orbit using its own thrusters. After its mission for IS-10-02, MEV-2 will undock and be available for another customer’s vehicle.

The first MEV, MEV-1, was launched in October 2019. It docked with Intelsat-901 in February 2020.

After MEV-2, Northrop Grumman and SpaceLogistics are developing a new generation of satellite servicing vehicles that could attach propulsion jetpacks to multiple spacecraft in a single mission.

- MEV-2 will be the first satellite servicing vehicle launched by Arianespace.
- MEV-2 will be the 30th Northrop Grumman satellite launched by Arianespace.
The BSAT-4b satellite, designed and built for Broadcasting Satellite System Corporation (B-SAT) – a leading broadcasting satellite operator in Japan – will be used for Direct-to-Home (DTH) television service above the Japan archipelago.

BSAT-4b satellite will serve as a backup system to BSAT-4a launched in September 2017. It will be the 10th Arianespace launch for B-SAT, and the satellite will provide Direct-To-Home (DTH) television to ensure exceptional 4K/8K ultra-high definition (UHD) video distribution across the Japan archipelago – like its BSAT-4a twin. BSAT-4b is designed to provide service for 15 years or longer.

B-SAT is a Japanese company created in April 1993 to manage satellite procurement, control and management of broadcast satellites, supply basic broadcasting stations and all related operations and businesses.

Arianespace has launched all B-SAT satellites since the creation of this Japanese operator, reflecting the launch services company’s exceptionally strong position in this market. This mission also underlines the exceptional quality of the partnership between Arianespace, Maxar (the satellite manufacturer) and the Japanese operator B-SAT.

The Arianespace market share of launch services for geostationary orbit satellites in Japan is 74% since Japan’s first commercial satellite launch JCSAT-1 on Ariane in 1989. In addition, Arianespace has launched a total of two auxiliary payloads in cooperation with Japan Aerospace Exploration Agency (JAXA).

Maxar is a major supplier of innovative satellite systems that already has built and integrated many of the most powerful and complete satellites in the world.

- BSAT-4b will be the 66th Maxar satellite launched by Arianespace.
- BSAT-4b will be the 68th satellite launched by Arianespace based on a Maxar platform.
- It will be the 58th satellite launched by Arianespace based on the 1300 platform.
- There currently are three Maxar satellites in Arianespace’s backlog.
MISSION DESCRIPTION

Arianespace’s fifth launch of 2020 will place its satellite passengers into geostationary transfer orbit. The launcher will be carrying a total payload of approximately 10,468 kg.

The launch will be performed from Ariane Launch Complex No. 3 (ELA-3) in Kourou, French Guiana.

DATE AND TIME

Liftoff is planned on Saturday, August 15, 2020, as early as possible within the following launch window:

- Between 5:33 p.m. and 6:20 p.m. Washington, D.C. time,
- Between 6:33 p.m. and 7:20 p.m. Kourou, French Guiana time,
- Between 21:33 and 22:20 Universal time (UTC),
- Between 11:33 p.m. and 12:20 a.m. Paris time, in the night of August 15 to August 16,
- Between 06:33 a.m. and 07:20 a.m. Japan time, in the morning of August 16.

MISSION DURATION

The nominal duration of the mission (from liftoff to separation of the satellites) is: 47 minutes, 39 seconds.

TARGETED GEOSTATIONARY ORBIT

<table>
<thead>
<tr>
<th>Perigee altitude</th>
<th>Apogee altitude</th>
<th>Inclination</th>
</tr>
</thead>
<tbody>
<tr>
<td>250 km.</td>
<td>35,738 km.</td>
<td>6 degrees</td>
</tr>
</tbody>
</table>

THE LAUNCH AT A GLANCE

The launcher’s attitude and trajectory are controlled by the two onboard computers located in the Ariane 5 vehicle equipment bay (VEB).

About seven seconds after start of the ignition of the main stage cryogenic engine at T-0, the two solid-propellant boosters are ignited, enabling liftoff. The launcher first climbs vertically for about 13 seconds, then rotates towards the East. It maintains an attitude that ensures the axis of the launcher remains parallel to its velocity vector to minimize aerodynamic loads throughout the entire atmospheric phase until the solid boosters are jettisoned.

The fairing protecting the payloads is jettisoned at T+200 seconds.

Once this first part of the flight is completed, the onboard computers optimize the trajectory in real time, minimizing propellant consumption to bring the launcher first to the intermediate orbit targeted at the end of the main stage propulsion phase, and then the final orbit at the end of the flight of the cryogenic upper stage.

The main stage splashes down off the coast of Africa in the Atlantic Ocean (in the Gulf of Guinea).

PAYLOAD CONFIGURATION

- **Upper payload (CUH):** Galaxy 30/MEV-2
  Mass at liftoff: 3,298 kg. for Galaxy 30 and 2,875 kg. for MEV-2
- **Lower payload (CUB):** BSAT-4b
  Mass at liftoff: 3,530 kg.
- **Long version of the payload fairing**
- **SYLDA (Système de Lancement Double Ariane)**
VA253
Galaxy 30/MEV-2
BSAT-4b

Galaxy 30/MEV-2 SATELLITES

<table>
<thead>
<tr>
<th>SATELLITE</th>
<th>Galaxy 30</th>
<th>MEV-2</th>
</tr>
</thead>
<tbody>
<tr>
<td>CUSTOMER</td>
<td>Intelsat</td>
<td>SpaceLogistics LLC</td>
</tr>
<tr>
<td>MANUFACTURER</td>
<td>Northrop Grumman</td>
<td>Northrop Grumman</td>
</tr>
<tr>
<td>MISSION</td>
<td>Telecommunications</td>
<td>Life extension vehicle</td>
</tr>
<tr>
<td>MASS AT LAUNCH</td>
<td>3,298 kg.</td>
<td>2,875 kg.</td>
</tr>
<tr>
<td>PLATFORM</td>
<td>GEOStar-2.4E</td>
<td>GEOStar-3</td>
</tr>
<tr>
<td>PROPULSION</td>
<td>Chemical bipropellant</td>
<td>Chemical monopropellant and Xe Electric</td>
</tr>
<tr>
<td>BATTERIES</td>
<td>2 x Li-ion</td>
<td>2 x Li-ion</td>
</tr>
<tr>
<td>PAYLOAD</td>
<td>C-band, Ku-band and Ka-band</td>
<td>C-band and Ku-band</td>
</tr>
<tr>
<td>COVERAGE AREA</td>
<td>USA, Alaska, Hawaii and Caribbean Islands</td>
<td></td>
</tr>
<tr>
<td>DESIGN LIFE</td>
<td>15 years</td>
<td>15 years</td>
</tr>
</tbody>
</table>

PRESS CONTACTS

Intelsat
Melissa Longo
Manager & Media Relations
Tel: +1 240 308-1881
E-mail: melissa.longo@intelsat.com
Website: www.intelsat.com

Northrop Grumman
Vicki Cox
Director Communications
Tel: +1 410 409-8723
E-mail: vicki.cox@ngc.com
Website: www.northropgrumman.com

For more information, visit us on arianespace.com
BSAT-4b SATELLITE

<table>
<thead>
<tr>
<th>CUSTOMER</th>
<th>Maxar Technologies for B-SAT corporation</th>
</tr>
</thead>
<tbody>
<tr>
<td>MANUFACTURER</td>
<td>Maxar Technologies</td>
</tr>
<tr>
<td>MISSION</td>
<td>DTH television services - advanced television services, such as HD and 4K/8K ultra HD</td>
</tr>
<tr>
<td>ORBITAL POSITION</td>
<td>110° East</td>
</tr>
<tr>
<td>MASS AT LAUNCH</td>
<td>3,530 kg.</td>
</tr>
<tr>
<td>PLATFORM</td>
<td>1300-140&quot;</td>
</tr>
<tr>
<td>BATTERIES</td>
<td>2 x 18 - cells Li-ion (102 Ah)</td>
</tr>
<tr>
<td>PROPULSION</td>
<td>Chemical bipropellant</td>
</tr>
<tr>
<td>PAYLOAD</td>
<td>Ku-band</td>
</tr>
<tr>
<td>COVERAGE AREA</td>
<td>Japan</td>
</tr>
<tr>
<td>DESIGN LIFE</td>
<td>15 years</td>
</tr>
</tbody>
</table>

**PRESS CONTACTS**

**B-SAT**
Hirotake Hamasaki  
Corporate Officer & Planning Division  
Tel: +81 3 5453 5707  
E-mail: h-hamasaki@b-sat.co.jp  
Website: www.b-sat.co.jp

**Maxar**
Kristin Carringer  
Media Relations  
Tel: +1 303 684-4352  
E-mail: kristin.carringer@maxar.com  
Website: www.maxar.com

For more information, visit us on arianespace.com
# ARIANE 5 ECA LAUNCH VEHICLE

The launcher is delivered to Arianespace by ArianeGroup as production prime contractor.

<table>
<thead>
<tr>
<th>Component</th>
<th>Height (m)</th>
<th>Mass (t)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fairing</strong> (RUAG Schweiz AG)</td>
<td>17</td>
<td>2.4</td>
</tr>
<tr>
<td><strong>Galaxy 30/MEV-2</strong> Northrop Grumman</td>
<td></td>
<td>3.298 (Galaxy 30) and 2.875 (MEV-2)</td>
</tr>
<tr>
<td><strong>BSAT-4b</strong> Maxar</td>
<td>1.13</td>
<td>0.530</td>
</tr>
<tr>
<td><strong>Vehicle Equipment Bay</strong></td>
<td>1.13</td>
<td>0.970</td>
</tr>
<tr>
<td><strong>HM-7B engine</strong></td>
<td></td>
<td>67 kN (in vacuum)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>945 sec. of propulsion</td>
</tr>
<tr>
<td><strong>EPC</strong> - Cryogenic main stage</td>
<td>31</td>
<td>188</td>
</tr>
<tr>
<td><strong>EAP</strong> - Solid rocket boosters</td>
<td>31.6</td>
<td>277 t. approx.</td>
</tr>
<tr>
<td><strong>Vulcain 2 engine</strong></td>
<td></td>
<td>1,410 kN (in vacuum)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>540 sec. of propulsion</td>
</tr>
<tr>
<td></td>
<td></td>
<td>13,000 kN at liftoff (at T+7.3 sec.)</td>
</tr>
<tr>
<td><strong>ESC-D</strong> - Cryogenic upper stage</td>
<td>4.71</td>
<td>19</td>
</tr>
<tr>
<td><strong>PA - Payload adaptor (2)</strong> (Airbus Defence and Space - ASE)</td>
<td></td>
<td>approx. 0.235</td>
</tr>
<tr>
<td><strong>SYLDA - Internal structure</strong></td>
<td></td>
<td>0.530</td>
</tr>
<tr>
<td><strong>MPS</strong> - Solid Rocket Motor (SRM)</td>
<td></td>
<td>Average: 5.060 kN, Maximum: 7.080 kN (in vacuum) 130 sec. of propulsion</td>
</tr>
</tbody>
</table>

780 metric tons (total mass at liftoff)
## LAUNCH CAMPAIGN - ARIANE 5: Galaxy 30/MEV-2 BSAT-4b

### SATELLITE AND LAUNCH VEHICLE CAMPAIGN CALENDAR

<table>
<thead>
<tr>
<th>DATE</th>
<th>SATELLITES ACTIVITIES</th>
<th>LAUNCH VEHICLE ACTIVITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 4, 2020</td>
<td>Campaign start review</td>
<td>EPC unpacking</td>
</tr>
<tr>
<td>June 5, 2020</td>
<td>EPC erection</td>
<td>EAP 2 transfer to the BIL (Launcher Integration Building)</td>
</tr>
<tr>
<td>June 8, 2020</td>
<td>EAP 1 transfer to the BIL (Launcher Integration Building)</td>
<td>EPC/EAP integration</td>
</tr>
<tr>
<td>June 9, 2020</td>
<td></td>
<td></td>
</tr>
<tr>
<td>June 22, 2020</td>
<td></td>
<td>Erection of ESC-D and vehicle equipment bay installation</td>
</tr>
<tr>
<td>June 27, 2020</td>
<td>Arrival of Galaxy 30/MEV-2 in French Guiana and transfer by road to the Spaceport’s S5C payload preparation facility</td>
<td></td>
</tr>
<tr>
<td>July 1, 2020</td>
<td>Arrival of BSAT-4b in French Guiana and transfer by road to the Spaceport’s S5C payload preparation facility</td>
<td></td>
</tr>
<tr>
<td>July 6, 2020</td>
<td>Galaxy 30/MEV-2 transfer to the Spaceport’s S5B payload fueling facility</td>
<td></td>
</tr>
<tr>
<td>July 7, 2020</td>
<td>Galaxy 30/MEV-2 fueling operations</td>
<td>Transfer from BIL to BAF (Final Integration Building)</td>
</tr>
<tr>
<td>July 8, 2020</td>
<td>BSAT-4b transfer to the Spaceport’s S5A payload fueling facility</td>
<td></td>
</tr>
<tr>
<td>July 9, 2020</td>
<td>MEV-2 integration on payload adaptor in S5B</td>
<td>BSAT-4b fueling operations</td>
</tr>
<tr>
<td>July 10, 2020</td>
<td>MEV-2 transfer to the BAF</td>
<td></td>
</tr>
<tr>
<td>July 11, 2020</td>
<td>MEV-2 hoisting onto SYLDA</td>
<td></td>
</tr>
<tr>
<td>July 13, 2020</td>
<td>Galaxy 30 transfer to the BAF</td>
<td></td>
</tr>
<tr>
<td>July 15, 2020</td>
<td>Galaxy 30 integration on payload adapter BSAT-4b under SYLDA</td>
<td></td>
</tr>
<tr>
<td>July 16, 2020</td>
<td>Galaxy 30 hoisting onto MEV-2</td>
<td></td>
</tr>
</tbody>
</table>

### SATELLITE AND LAUNCH VEHICLE CAMPAIGN FINAL CALENDAR

<table>
<thead>
<tr>
<th>DATE</th>
<th>SATELLITES ACTIVITIES</th>
<th>LAUNCH VEHICLE ACTIVITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Friday, July 17, 2020</td>
<td>Payload fairing encapsulation on SYLDA BSAT-4b transfer to the BAF</td>
<td></td>
</tr>
<tr>
<td>Saturday, July 18, 2020</td>
<td>BSAT-4b integration on launch vehicle</td>
<td>HM7B engine final inspection</td>
</tr>
<tr>
<td>Sunday, July 19, 2020</td>
<td>Composite (Galaxy 30/MEV-2 under fairing) integration on launch vehicle (BSAT-4b under SYLDA)</td>
<td></td>
</tr>
<tr>
<td>Tuesday, July 21, 2020</td>
<td>Upper Composite flight configuration set-up</td>
<td>Finalization of the composite/launcher integration</td>
</tr>
<tr>
<td>Wednesday, July 22, 2020</td>
<td>General dress rehearsal</td>
<td>Dress rehearsal</td>
</tr>
<tr>
<td>Wednesday, July 29, 2020</td>
<td></td>
<td>Final preparation of launcher and BAF for chronology</td>
</tr>
<tr>
<td>Thursday, July 30, 2020</td>
<td>Functional checkout of the satellites after transfer on the launch pad</td>
<td>Launch readiness review (LRR) Aiming of launch vehicle</td>
</tr>
<tr>
<td>Date</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>-----------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Friday, July 31, 2020</td>
<td>Start of launch countdown, EPC and ESC-D filling with liquid oxygen and liquid hydrogen Interruption of the countdown at H0 - 2'14. Launch delay</td>
<td></td>
</tr>
<tr>
<td>Monday, August 3, 2020</td>
<td>Both S/C project put satellites in stand-by mode under fairing waiting for the final chronology restart on D-1 Rollout from Launch Zone to the BAF</td>
<td></td>
</tr>
<tr>
<td>From Tuesday, August 4, 2020 to Wednesday, August 5, 2020</td>
<td>Additional maintenance operations on the launcher</td>
<td></td>
</tr>
<tr>
<td>Thursday, August 6, 2020</td>
<td>HM7B lubrication</td>
<td></td>
</tr>
<tr>
<td>From Friday, August 7, 2020 to Tuesday, August 11, 2020</td>
<td>Defective sensor replacement Additional maintenance operations on the launcher Resumption of the combined operations</td>
<td></td>
</tr>
<tr>
<td>Wednesday, August 12, 2020</td>
<td>Launch readiness review (LRR) n°2 Arming of launch vehicle</td>
<td></td>
</tr>
<tr>
<td>Thursday, August 13, 2020</td>
<td>Functional checkout of the satellites after transfer on the launch pad Final preparation of launcher and BAF for chronology Roll-out from BAF to the launch pad, launch vehicle connections and filling of the EPC liquid helium tank</td>
<td></td>
</tr>
<tr>
<td>Saturday, August 15, 2020</td>
<td>Start of launch countdown, EPC and ESC-D filling with liquid oxygen and liquid hydrogen</td>
<td></td>
</tr>
</tbody>
</table>
COUNTDOWN AND FLIGHT SEQUENCES

The countdown comprises all final preparation steps for the launcher, the satellites and the launch pad. If it proceeds as planned, the countdown leads to ignition of the main stage engine, then the two boosters, for a liftoff at the targeted time.

The countdown culminates in a synchronized sequence, which is managed by the control station and onboard computers starting at T-7 minutes.

If an interruption in the countdown results in the T-0 moving outside the launch window, then the launch will be delayed by one, two or more days, depending on the problem involved, and the solution developed.

<table>
<thead>
<tr>
<th>TIME</th>
<th>EVENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>- 11 h</td>
<td>Start of final countdown</td>
</tr>
<tr>
<td>- 10 h</td>
<td>Check of electrical systems</td>
</tr>
<tr>
<td>- 04 h</td>
<td>Start of filling of EPC with liquid oxygen and liquid hydrogen</td>
</tr>
<tr>
<td>- 03 h</td>
<td>Start of filling of ESC-D with liquid oxygen and liquid hydrogen</td>
</tr>
<tr>
<td>- 03 h</td>
<td>Chilldown of Vulcain main stage engine</td>
</tr>
<tr>
<td>- 01 h</td>
<td>Check of connections between launcher and the telemetry, tracking and command systems</td>
</tr>
<tr>
<td>- 7 min</td>
<td>“All systems go” report, allowing start of synchronized sequence</td>
</tr>
<tr>
<td>- 4 min</td>
<td>Tanks pressurized for flight</td>
</tr>
<tr>
<td>-1 min</td>
<td>Switch to onboard power mode</td>
</tr>
<tr>
<td>- 05 s</td>
<td>Opening command for the cryogenic arms</td>
</tr>
<tr>
<td>- 04 s</td>
<td>Onboard systems take over</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>T-0</th>
<th>Reference time</th>
</tr>
</thead>
<tbody>
<tr>
<td>+ 01.00 s</td>
<td>Ignition of the cryogenic main stage (EPC)</td>
</tr>
<tr>
<td>+ 07.01 s</td>
<td>Ignition of solid boosters (EAP)</td>
</tr>
<tr>
<td>+ 07.3 s</td>
<td>Liftoff</td>
</tr>
<tr>
<td>+ 12.7 s</td>
<td>End of vertical climb, beginning of pitch motion</td>
</tr>
<tr>
<td>+ 17.05 s</td>
<td>Beginning of roll maneuver</td>
</tr>
<tr>
<td>+ 32.05 s</td>
<td>End of roll maneuver</td>
</tr>
<tr>
<td>+ 2 min</td>
<td>EAP separation</td>
</tr>
<tr>
<td>+ 3 min</td>
<td>Fairing jettisoned</td>
</tr>
<tr>
<td>+ 7 min</td>
<td>Acquisition by Natal tracking station</td>
</tr>
<tr>
<td>+ 8 min</td>
<td>End of EPC thrust phase</td>
</tr>
<tr>
<td>+ 8 min</td>
<td>EPC separation</td>
</tr>
<tr>
<td>+ 8 min</td>
<td>Ignition of ESC-D stage</td>
</tr>
<tr>
<td>+ 13 min</td>
<td>Acquisition by Ascension tracking station</td>
</tr>
<tr>
<td>+ 18 min</td>
<td>Acquisition by Libreville tracking station</td>
</tr>
<tr>
<td>+ 23 min</td>
<td>Acquisition by Malindi tracking station</td>
</tr>
<tr>
<td>+ 25 min</td>
<td>Extinction of ESC-D stage</td>
</tr>
<tr>
<td>+ 25 min</td>
<td>Injection</td>
</tr>
<tr>
<td>+ 27 min</td>
<td>Galaxy 30 satellite separation</td>
</tr>
<tr>
<td>+ 34 min</td>
<td>MEV-2 satellite separation</td>
</tr>
<tr>
<td>+ 35 min</td>
<td>SYLDA separation</td>
</tr>
<tr>
<td>+ 47 min</td>
<td>BSAT-4b satellite separation</td>
</tr>
</tbody>
</table>
ARIANE 5 ECA MISSION PROFILE

The launcher’s attitude and trajectory are entirely controlled by the two onboard computers in the Ariane 5 Vehicle Equipment Bay (VEB).

The synchronized sequence starts seven minutes before ignition (T₀). It is primarily designed to perform the final operations on the launcher prior to launch, along with the ultimate checks needed following switchover to flight configuration. As its name indicates, the sequence is fully automatic, and is performed concurrently by the onboard computer and by two redundant computers at the ELA-3 launch complex until T-4 seconds. The computers command the final electrical operations (startup of the flight program, servocontrols, switching from ground power supply to onboard batteries, etc.) and associated checks. They also place the propellant and fluid systems in flight configuration and perform associated checks. In addition, they handle the final ground system configurations, namely:

- Startup of water injection in the flame trenches and exhaust guide (T-30 sec).
- Hydrogen aspiration for chilldown of the Vulcain engine in the exhaust guide (T-18 sec).
- Burn-off of hydrogen used for chilldown (T-5.5 sec).

At T-4 seconds, the onboard computer takes over control of final engine startup and liftoff operations. It:

- Starts the ignition sequence for the Vulcain main stage engine (T₀).
- Checks engine operation (from T+4.5 to T+6.9 sec).
- Commands ignition for the solid boosters at T+7.05 sec for liftoff at T+7.3 seconds.

Any shutdown of the synchronized sequence after T-7 minutes automatically places the launcher back in its T-7-minute configuration.
ARIANESPACE AND THE GUIANA SPACE CENTER

ARIANESPACE, THE WORLD’S FIRST LAUNCH SERVICES COMPANY

Arianespace was founded in 1980 as the world’s first launch Services & Solutions company. Arianespace is a subsidiary of ArianeGroup, which holds 74% of its share capital; the balance is held by 15 other shareholders from the European launcher industry.

Since the outset, Arianespace has signed over 600 launch contracts and launched more than 650 satellites. More than half of the commercial satellites now in service around the globe were launched by Arianespace.

The company’s activities are worldwide, with the headquarters in Evry, France (near Paris); the Guiana Space Center in French Guiana, where the Ariane, Soyuz and Vega launch pads are located; and offices in Washington, D.C., Tokyo and Singapore. Arianespace offers launch services to satellite operators from around the world, including private companies and government agencies. These services call on three launch vehicles:

- The Ariane 5 heavy-lift launcher, operated from the Guiana Space Center in French Guiana.
- The Soyuz medium-lift launcher, currently in operation at the Guiana Space Center and the Baikonur Cosmodrome in Kazakhstan.
- The Vega light-lift launcher, also operated from the Guiana Space Center.

Building on its complete family of launchers, Arianespace has won over half of the GEO commercial launch contracts up for bid worldwide in the past two years. Arianespace now has a backlog of more than 750 satellites to be launched.

THE GUIANA SPACE CENTER: EUROPE’S SPACEPORT

For more than 50 years, the Guiana Space Center (CSG), Europe’s Spaceport in French Guiana, has offered a complete array of facilities for rocket launches. It primarily comprises the following:

- The CNES/CSG technical center, including various resources and facilities that are critical to launch base operations, such as radars, telecom network, weather station, receiving sites for launcher telemetry, etc.
- Payload processing facilities (EPCU), in particular the S5 facility.
- Ariane, Soyuz and Vega launch complexes, comprising the launch zones and launcher integration buildings.
- Various industrial facilities – including those operated by Regulus, Europropulsion, Air Liquide Spatial Guyane and ArianeGroup – all participate in the production of Ariane 5 components. A total of 40 European manufacturers and local companies are involved in the launcher operations.

Europe’s commitment to independent access to space is based on actions by three key players: the European Space Agency (ESA), the French CNES space agency and Arianespace. ESA is responsible for the Ariane, Soyuz and Vega development programs. Once these launch systems are qualified, ESA transfers responsibility to Arianespace as the operator. ESA has helped change the role of the Guiana Space Center, in particular by funding the construction of the launch complexes, payload processing buildings and associated facilities. Initially used for the France’s space program, the Guiana Space Center has evolved into Europe’s own Spaceport, according to the terms of an agreement between ESA and the French government. To ensure that the Spaceport is available for its programs, ESA takes charge of the lion’s share of the CNES/CSG fixed expenses, and also helps finance the fixed costs for the ELA launch complexes.

The French CNES space agency has several main responsibilities at the Guiana Space Center. It designs all infrastructure and, on behalf of the French government, is responsible for safety and security. It provides the resources needed to prepare the satellites and launchers for missions. Whether during tests or actual launches, CNES is also responsible for overall coordination of operations and it collects and processes all data transmitted from the launcher via a network of receiving stations to track Ariane, Soyuz and Vega rockets throughout their trajectories.

ARIANESPACE IN FRENCH GUIANA

In French Guiana, Arianespace is the contracting authority in charge of operating the family of three launchers: Ariane, Soyuz and Vega. Arianespace supervises the integration and checks of the Ariane launcher – which is built under ArianeGroup responsibility as the production prime contractor; coordinates the satellite preparations that are performed in parallel inside the Payload Preparation Complex (EPCU) [which is operated by the Guiana Space Center - CNES/CSG], followed by the payload’s integration on the launcher in the Final Assembly Building (BAP); and also works with ArianeGroup teams in charge of the launcher to conduct the final countdown and launch from Launch Control Center no. 3 (CDL3).

Arianespace deploys a top-flight team and technical facilities to ensure the launchers and their satellite payloads are ready for their missions. Building on this unrivalled expertise and outstanding local facilities, Arianespace is now the undisputed benchmark in the global launch services market.