

## **India - France Bilateral Cooperation in Space**

France and India regard each other as key partners in space technology and its applications. The Indian Space Research Organisation (ISRO) and its French counterpart, the Centre National d'Études Spatiales (CNES), share a rich history of cooperation spanning more than six decades.

2. This partnership began in the early 1960s with the establishment of sounding rocket launch facilities at Thumba, Kerala, and has since expanded across diverse areas of space activities. ISRO and CNES have collaborated as equal partners in developing and realising two joint satellites: Megha-Tropiques, launched in 2011 to monitor the tropical atmosphere, and the satellite for ARGOS and ALTIKA (SARAL), launched in 2013. Both missions were successfully placed into orbit using India's Polar Satellite Launch Vehicle (PSLV) and have delivered valuable data for atmospheric studies, environmental monitoring, and ocean surface topography.

3. India's first experimental geostationary communication satellite, APPLE, was launched in 1981, aboard France's Ariane vehicle, marking the beginning of a decades-long partnership with Arianespace.

4. This long-standing collaboration between India and France in space technology and applications has matured over the years, now encompassing multiple domains and underscoring the robust strategic partnership between the two nations. ISRO and CNES continue to advance joint programmes in Earth observation, space geodesy, human spaceflight, next-generation launch vehicle technologies, and planetary exploration.

5. Cooperation in space was one of the highlights of Prime Minister Modi's visit to France in April 2015, when a special exhibition was organised at CNES headquarters in Paris, several MoUs on space cooperation were signed and commemorative stamps on Megha-Tropiques and SARAL were released. During the visit, Prime Minister Modi toured CNES facilities in Toulouse as well.

6. The ISRO-CNES Programme for Reinforced Cooperation in Space Activities of April 2015 provided framework for India-France Space Cooperation and undertaking cooperative activities. In addition, a vision document, detailing the areas of cooperation was released during

the visit of French President Emmanuel Macron to India in March 2018. Both sides further exchanged cooperation proposals addressing (i) Earth observation and remote sensing; (ii) space situational awareness; (iii) Global Navigation Satellite System; (iv) solar system; (v) space transportation system; (vi) human space flight. Most of the identified areas are under implementation.

7. The *Horizon 2047 Roadmap* of July 2023 puts space at the heart of the India-France strategic partnership, deciding to deepen the cooperation in all areas of space sector by strengthening the programmes of common interest, including scientific and commercial partnerships, resilience of access to space and engaging through the bilateral strategic space dialogue mechanism.

8. The first India-France Strategic Space Dialogue, held in Paris on 26 June 2023, reviewed ongoing cooperation and identified new opportunities in the civil, commercial, and defence space sectors. The second India-France Strategic Space Dialogue, held in New Delhi on 4 March 2024, assessed progress since the inaugural meeting and explored new opportunities under the *Horizon 2047 Roadmap*. These included implementation of the Defence Space Letter of Intent, government-to-government (G2G) initiatives, capacity building, and industrial partnerships.

### **Ongoing Collaborations**

9. Some of the major ongoing collaboration in the field of space include the following:

(a) Building on the success of Megha-Tropiques and SARAL, ISRO and CNES are jointly developing the TRISHNA mission—a high-resolution thermal infrared Earth observation satellite. This mission will deliver critical data for water resource management, agricultural productivity assessment, and climate change impact studies.

(b) India's NewSpace India Limited (NSIL) and France's Arianespace are advancing their collaboration in commercial satellite launches. A Memorandum of Understanding (MoU) signed on 29 January 2024 establishes a long-term partnership to jointly address global satellite launch demands using NSIL's LVM-3 and Arianespace's Ariane-6 vehicles.

(c) To date, India's highly reliable PSLV has successfully launched four French satellites, while Arianespace has placed 24 Indian communication satellites into geostationary orbit on a commercial basis.

(d) ISRO and CNES are jointly developing a Maritime Domain Awareness (MDA) mission to strengthen maritime surveillance in the Indian Ocean Region.

(e) France is supporting India's prestigious *Gaganyaan* mission. ISRO and CNES have jointly identified the areas of cooperation in human spaceflight as per which, CNES will be supporting *Gaganyaan* mission in the fields of space medicine and supply of crew support element. Most recently, a Letter of Intent between CNES and ISRO to enhance cooperation in the field of microgravity research and human space exploration was signed in June 2026, during Prime Minister Narendra Modi's visit to Nice.

(f) Both countries have been mutually supporting the accommodation of each other's payloads. For instance, CNES's ARGOS-4 instrument, designed for data collection, was accommodated on ISRO's Oceansat-3 satellite, also known as EOS-6. This next-generation instrument provides operational continuity to the ARGOS system for environmental monitoring and wildlife tracking. The ARGOS-4 payload was integrated with the Oceansat-3 satellite at the U. R. Rao Satellite Centre in Bengaluru, and the mission was successfully launched on 26 November 2022.

(g) Other areas of cooperation include launch vehicle technologies, space geodesy, Ka-band propagation instruments and professional exchange programmes.

### **Private Sector Collaborations**

10. Opening-up of space sector to private entities in India has ushered new industrial and start-up partnerships among private Indian and French space companies. The Indian Space Association (ISpA) and the French Aerospace Industries Association (GIFAS) signed a Memorandum of Understanding (MoU) on 9 October 2023 during the second edition of the Indian Space Conclave in New Delhi. This agreement aims to foster deeper understanding of space industry capabilities and explore business opportunities between India and France. It promotes enhanced business-to-business (B2B) and startup-to-startup collaborations, driving innovation and sustainable growth in the bilateral space sector.

11. Most recently, during President Macron's visit to India in February 2026, an MoU between two private firms was signed for maritime satellite ground infrastructure and surveillance. Three contracts were signed for a French company to supply electric propulsion to three Indian startups. A bilateral private agreement was also signed to deploy optical stations for Space Situational Awareness.

\*\*\*

*July 2026*