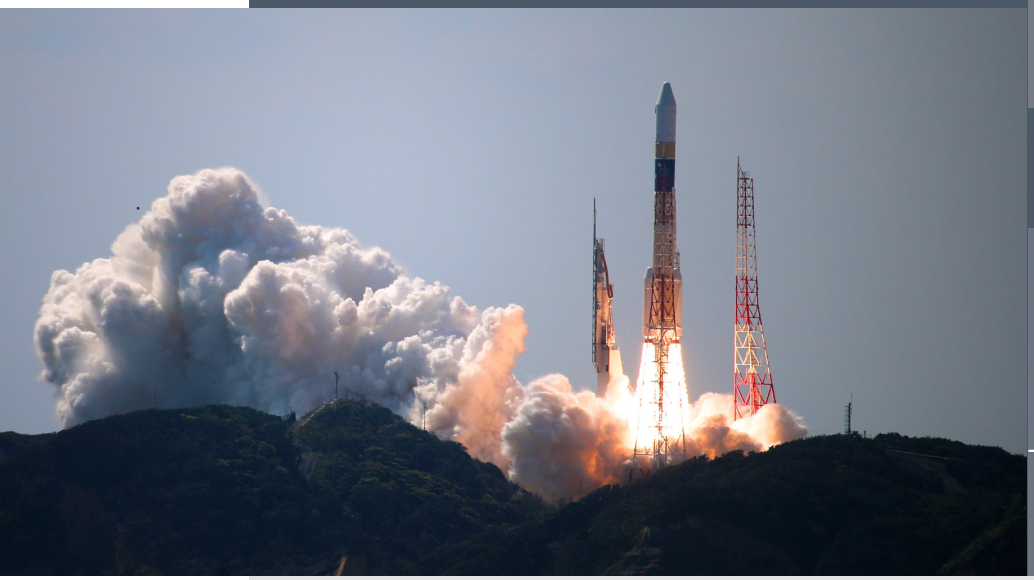
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Space Security and Missile Defense
Japan's Quest for Autonomy and Indispensability

Nanae BALDAUFF

Key Takeaways

- Japan's pursuit of strategic autonomy does not mean reducing dependence on the United States (US). Rather, Japan is reducing critical vulnerabilities by developing sovereign space capabilities while remaining integrated into the US-led security architecture.
- Missile defense best illustrates this strategy. Japan is developing capabilities in missile warning, space-based sensing, Positioning, Navigation, and Timing (PNT), Intelligence, Surveillance, and Reconnaissance (ISR), and communications while ensuring interoperability with US systems. This strengthens Japan's freedom of action while increasing its indispensability to the alliance.
- European partnerships are progressing through three stages: cooperation, collaboration, and integration. Japan Europe partnerships are rapidly developing in all three stages.
- Missile warning needs should not be confined only to the Japan-US alliance. Japan needs to determine where needs can be filled in other areas such as ISR or space domain awareness.

Introduction

Can a nation deepen its reliance on an ally while pursuing greater strategic autonomy? Japan is attempting to do precisely this, in the space domain and across its broader security posture.

For the past fifteen years or so, Japan has been pursuing a three-pronged strategy: strengthening its own defense capabilities, reinforcing the Japan–United States (US) alliance, and expanding strategic partnerships. First articulated in Japan's inaugural National Security Strategy (NSS), published in 2013, these lines of effort were reaffirmed in the 2022 revision and continue to shape Japan's strategic choices as the country prepares to update its NSS and Defense Buildup Program by the end of 2026. Originally developed in the context of economic security, the concepts of strategic autonomy and strategic indispensability can also illuminate Japan's broader strategic posture, particularly in the space domain.

In the security realm, strategic autonomy refers to strengthening Japan's own capabilities: by raising its defense spending to 2% of gross domestic product (GDP) and beyond, Japan both bolsters its own deterrent effect and provides insurance to the US to ensure its security commitment. At the same time, Japan is also diversifying its advancing security and defense cooperation with like-minded countries to hedge against the risk of a US retreat.[1]

Strategic indispensability is originally about expanding capabilities where Japan is indispensable in the global value chain.[2] It now extends across foreign and security policy, including the space domain, where Japan has developed cutting-edge technologies.[3]

This dual pursuit of strategic autonomy and indispensability helps explain why Japan is deepening its alliance with the US while broadening its partnerships. In April 2024, Tokyo and Washington announced plans to collaborate on a Low Earth Orbit (LEO) constellation to detect and track missiles, including hypersonic glide vehicles (HGVs).[4] The establishment of US Space Forces–Japan at Yokota Air Base in December 2024 further institutionalized space cooperation, underscoring the growing importance of space security to the bilateral alliance.[5]

1. S. Mori, "Trump's Indo-Pacific Vision & Japan's Strategic Autonomy", Ifri, video, June 23, 2025, available at: www.ifri.org.
2. Japan Policy Forum, "The Urgent Need to Establish 'Strategic Autonomy' and 'Strategic Indispensability'", *Diplomacy*, No. 67, October 31, 2021, available at: www.japanpolicyforum.jp.
3. K. Sasae, "Introduction: A Strategic Perspective for 2026: Japan's Strategic Autonomy and Indispensability in an Era of Uncertainty", in: *Strategic Outlook 2026*, Tokyo: The Japan Institute of International Affairs (JIIA), March 31, 2026, pp. 2-4, available at: www.jiia.or.jp.
4. "Global Partners for the Future", Japan-US Joint Leaders' Statement, April 10, 2024, available at: www.mofa.go.jp.
5. "Space Force Activates Component Field Command in Japan", U.S. Space Force, December 5, 2024, available at: www.spaceforce.mil.

At the same time, Japan is expanding and deepening defense cooperation with European partners in the space domain. Such partnerships can help strengthen Japan's domestic industrial capabilities, diversify its technological relationships, and enhance its ability to access and exploit space-based intelligence.[6]

Japan's autonomy–indispensability approach can therefore be understood as threefold: first, to reduce critical dependencies by developing sovereign capabilities and acquiring technologies not only from the US but also from other strategic partners where appropriate; second, to strengthen its value as an alliance partner to the US; and third, to become a more indispensable partner to other strategic partners. These three objectives are mutually reinforcing. Sovereign capabilities reduce Japan's exposure to external dependencies, greater alliance value gives the US stronger incentives to sustain its engagement with Japan, and deeper interdependence with other partners broadens Japan's strategic options and reduces its reliance on any single partner.

How does Japan seek to reconcile greater strategic autonomy with deeper integration with the US, and what does this mean for Japan–Europe space-security cooperation?

Japan's model: autonomy through alliance integration

Japan ranks among the world's handful of comprehensive space powers. Alongside the US, China, Russia, India and Europe, it commands the full set of capabilities needed to act independently in orbit, including launch, secure satellite communications, positioning, navigation and timing, Earth observation and reconnaissance, and access to both low Earth and geostationary orbit. This breadth is what gives Japan something to offer an ally, and what makes its pursuit of autonomy credible in the first place.

Postwar Japan's strong antimilitarist norms shaped its space policy around an exclusively peaceful, civilian-oriented approach. A 1969 parliamentary resolution restricted space activities to peaceful purposes, effectively excluding military applications. This self-imposed constraint reflected Japan's constitutional and political commitments while limiting the development of sovereign space capabilities for national security.

However, the changing security environment gradually exposed the limitations of this approach. North Korea's 1998 missile launch highlighted Japan's dependence on US intelligence, while China's 2007 anti-satellite test demonstrated that space had become a contested military domain.[7] These developments underscored Japan's vulnerability and the growing importance of space-based intelligence, surveillance, and missile defense.

6. "IHI Advances Domestic Satellite Assembly and Testing Capabilities in Japan", IHI, July 22, 2026, available at: www.ihi.co.jp.
7. K. Suzuki, "宇宙空間の軍事的重要性の高まりと宇宙安全保障" [The Growing Military Importance of Outer Space and Space Security], *Kokusai Anzen Hoshō* [*Journal of International Security*], Vol. 41, No. 1, June 2013.

The 2008 Basic Space Law[8] marked a major turning point by explicitly permitting the use of space for national security, moving beyond the restrictive interpretation established in 1969.[9] This transformation reflected a growing recognition that Japan's security could no longer be separated from developments in space and missile technology. It also elevated space policy from a predominantly scientific and technological concern to an element of Japan's broader national strategy, strengthening coordination through the Cabinet Office.[10] Rather than abandoning its postwar constraints, Japan increasingly interpreted peaceful use as compatible with defensive military applications.

Since 2018, Japan has increasingly integrated space into its broader defense strategy

Since 2018, Japan has increasingly integrated space into its broader defense strategy. The National Defense Program Guidelines[11] adopted that year stated, for the first time, Japan's intention to ensure space superiority from peacetime to contingencies. This signaled a shift from treating space primarily as a supporting capability to recognizing it as an operational domain essential to national defense.

Taken together, these developments illustrate the evolution of Japan's space-security strategy from restrictive civilian use toward the systematic integration of space into national defense. This transformation does not imply a pursuit of strategic independence from the US. Rather, Japan seeks greater capacity to act, enhanced strategic autonomy, and a stronger position as an indispensable partner within the US-Japan alliance and a wider network of security partnerships.

Missile defense as the clearest expression of autonomy-indispensability model

Since the 1996 Taiwan Strait crisis, when US intervention put a stop to Chinese military action, China has pursued an Anti-Access/Area Denial (A2/AD) strategy to prevent external powers, particularly the US, from entering and operating freely within a theater.[12] Alongside conventional military modernization, the People's Liberation Army has integrated space, counterspace, cyber, electromagnetic, and information warfare into joint operations.[13] As adversaries deploy increasingly sophisticated missile capabilities, effective command and control requires a common operational picture across the maritime, land, air, space, and cyber domains.[14]

8. *Basic Space Law*, 2008 (in Japanese), Japan Cabinet Office, available at: www8.cao.go.jp.
9. L. Fatton, "Japan's Space Program: Shifting Away from 'Non-Offensive' Purposes?", *Asie.Visions*, No. 115, Ifri, July 2020.
10. "Japan's Space Policy", Nippon.com, April 12, 2021, available at: www.nippon.com.
11. *National Defense Program Guidelines* (NDPG) and *Medium Term Defense Program* (MTDP), Japan Ministry of Defense, available at: www.mod.go.jp.
12. J. Fukuda, "Countering China's Anti-Access/Area Denial Capabilities", *IIPS Quarterly*, Vol. 6, No. 1, 2015.
13. *National Defense Strategy*, U.S. Department of Defense, 2022.
14. L. Cowie et al., "To Build Joint Command and Control, First Break Joint Command and Control", War on the Rocks, July 2, 2021, available at: warontherocks.com.

Since becoming the first non-NATO ally to adopt the Patriot air defense system in the mid-1980s, Japan–US missile cooperation has included wide-ranging programs, from Aegis ships and PAC-3 production to the co-development of the Glide Phase Interceptor (GPI) for HGVs. The evolution of missile defense cooperation illustrates this broader pattern: Japan strengthens its own capabilities while increasing its indispensability to US-led air and missile defense.

Missile defense is also where the alliance reaches furthest into space. Starting in 2021, Japan joined a US satellite constellation initiative to study how proliferated small satellites can monitor missiles.[15] This initiative led to the bilateral collaboration agreed in April 2024 on the LEO detection and tracking constellation mentioned earlier.[16] As Japan has no experience in building missile tracking satellites, the US's know-how is indispensable. The constellation will complement the US Space Development Agency's Proliferated Warfighter Space Architecture (PWSA).[17] Japan will contribute through on-orbit demonstrations of infrared sensors and related technologies to improve the detection and tracking of HGVs and other advanced threats.[18]

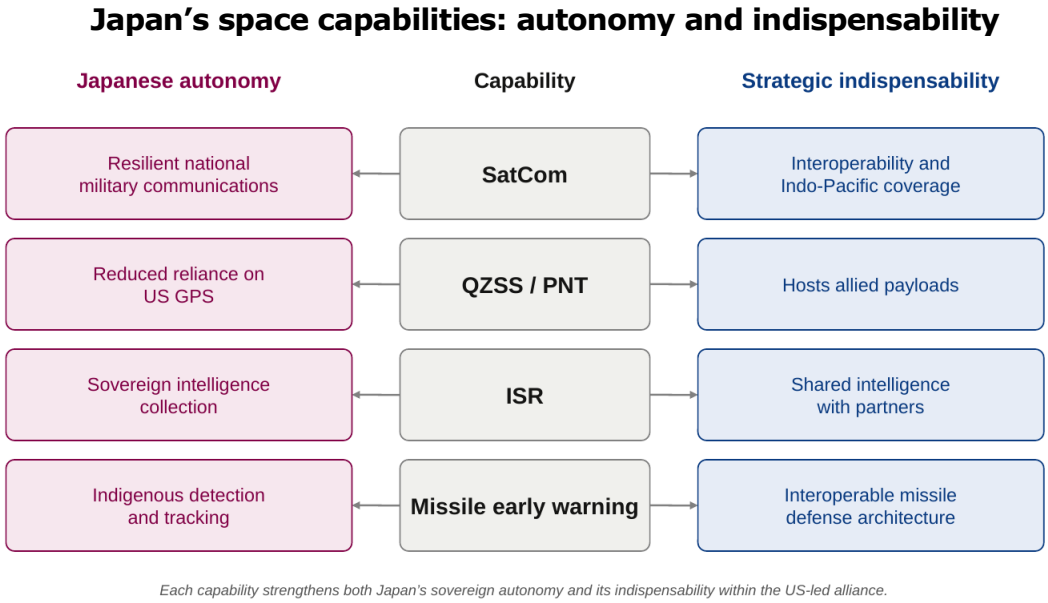
A mutual interdependence rather than simple Japanese dependence on the US

In parallel, using JAXA's cargo HTV-X[19] as a testing platform, Japan is in the process of technology demonstrations for detecting and tracking highly maneuverable, low-flying missile threats.[20] In addition, the Ministry of Defense (MOD) has conducted a concept-design study for an infrared sensor to be hosted on a domestically produced GEO satellite for HGV detection and tracking.[21] One of the requirements for this is to consider interoperability with the PWSA.

The relationship is therefore better understood as mutual interdependence rather than simple Japanese dependence on the US. Washington provides expertise and access to an established architecture, while Tokyo contributes technology and coverage that can improve the alliance's ability to address emerging missile threats.

15. "Japan to Mull Joining US 'Satellite Constellation' Initiative to Counter Missile Threats", *The Mainichi*, January 12, 2021, available at: mainichi.jp.
16. "Global Partners for the Future", op. cit.
17. B. Rimland, "US-Japan Cooperation on Tactically Responsive Space: Near-Term Capability and Long-Term Alignment", CSIS, September 11, 2024, available at: www.csis.org.
18. "宇宙開発戦略本部 第３４回会合 議事次第" [Agenda for the 34th Meeting of the Space Development Strategy Headquarters], Japan Cabinet Office, National Space Policy Secretariat, June 12, 2026, available at: www8.cao.go.jp.
19. HTV-X is a next-generation unmanned cargo spacecraft developed by JAXA. It supplies the International Space Station and serves as the successor to the H-II Transfer Vehicle (HTV, or the *Kounotori*).
20. "衛星を活用した HGV 探知・追尾等の対処能力の向上に必要な技術実証の進捗状況について", [Progress on Technology Demonstrations Necessary to Improve Capabilities for Satellite-Based HGV Detection, Tracking, and Other Countermeasures], Japan Ministry of Defense, March 12, 2024, available at: www.mod.go.jp.
21. "静止衛星ホステッドペイロードとしての赤外線センサ搭載に関する調査研究" [Research Study on the Installation of an Infrared Sensor as a Hosted Payload on a Geostationary Satellite], Japan Ministry of Defense, January 21, 2025.

Japan's sovereign capabilities and contribution to the alliance integration



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The 2022 National Defense Strategy identified seven capability priorities, of which long-range counterstrike, interoperable air and missile defense, unmanned systems, cross-domain operations, command, control and intelligence[22] depend heavily on space-based capabilities.[23] To support these objectives, Japan is expanding its space capabilities in all the essential functions.

In satellite communications, Japan is developing a resilient, multi-layered, multi-orbit network extending from the stratosphere to LEO and GEO.[24] The 2025 Space Domain Defense Guidelines identify defense satellite communications as the operational foundation of the Ministry of Defense and Self-Defense Forces,[25] providing the real-time connectivity and situational awareness required for both national defense and interoperability with allies and partners. In military satellite communications, Japan is squarely focusing on sovereign capability with the *Kirameki* military satellite built by Mitsubishi Electric (MELCO).[26] Lockheed Martin supports this by providing an anti-jamming payload to MELCO, helping ensure Kirameki's interoperability within the US-

22. *National Defense Strategy*, Japan Ministry of Defense, December 16, 2022, available at: www.mod.go.jp.
23. N. Baldauff, "Japan, Space Security, and Defense Buildup: Perspectives from Recent Strategies", ISPI, October 7, 2025, available at: www.ispionline.it.
24. *Space Security Initiative*, Japan Space Development Strategy Headquarters, June 2023, available at: www8.cao.go.jp.
25. *Space Domain Defense Guidelines*, Japan Ministry of Defense, August 7, 2025, available at: www.mod.go.jp.
26. "Mitsubishi Electric Awarded Contract for Next-Generation Defense Satellite Communications System by Japan Ministry of Defense", Mitsubishi Electric (MELCO), February 6, 2026, available at: www.mitsubishielectric.com.

led space architecture.[27] Furthermore, Japan is preparing to join the US-led Protected Anti-jam Tactical SATCOM.[28] Here, Japan does not just adopt the US architecture for resilient communications; the ground segment Japan offers to the US family system is as valuable to partners as the space segment.

Japan's PNT (Positioning, Navigation and Timing) capability is centered on the Quasi-Zenith Satellite System (QZSS), or *Michibiki*. QZSS is Japan's regional PNT and is designed to work with the US Global Positioning System (GPS) and eventually replace it once it becomes an 11-satellite constellation.[29] QZSS could simultaneously make Japan less dependent on the US for PNT while making Japan more indispensable for other countries across the Asia-Oceania region to rely on the Japanese space infrastructure. Beyond navigation, QZSS has become an important alliance platform. In August 2026, Japan hosted US Space Force sensors on a QZSS satellite for the second and final time under a bilateral program with the National Space Policy Secretariat (NSPS),[30] improving US space domain awareness over the Indo-Pacific while increasing the resilience of allied sensing capabilities[31]. Rather than competing with alliance integration, Japan's sovereign infrastructure can therefore become an asset within it. QZSS thus offers perhaps the clearest example of autonomy and indispensability developing simultaneously: Japan can reduce a critical dependency while creating a regional capability on which partners may increasingly depend.

With QZSS, Japan can reduce a critical dependency while creating a regional capability

Space-based ISR (Intelligence, Surveillance and Reconnaissance) has become equally important as Japan develops long-range counterstrike capabilities. China's deployment of the DF-17 ballistic missile equipped with a HGV has reinforced the need to detect, track, and target highly maneuverable threats. Japan's Information Gathering Satellites, introduced after North Korea's 1998 Taepodong missile launch, marked the country's first sovereign military space capability.[32] Since then, China has expanded its military satellite fleet dramatically,[33] prompting Japan to develop a larger ISR satellite constellation with higher revisit rates to improve intelligence collection and targeting. ISR represents a somewhat different dimension of autonomy: unlike PNT, where

27. "Lockheed Martin To Support Japan's Next-Generation Defense Communications Satellite with Anti-Jamming Capability", March 3, 2026, available at: https://news.lockheedmartin.com.
28. *Space Domain Defense Guidelines*, Japan Ministry of Defense, August 7, 2025, available at: www.mod.go.jp.
29. "Michibiki Interview with Takehiro Sakai of the Electronic Navigation Research Institute (ENRI)", Cabinet Office, Government of Japan, September 24, 2024, available at: https://qzss.go.jp.
30. G. Hadley, "Japan Puts New US Space Force Capability into Orbit", *Air & Space Forces Magazine*, February 6, 2025, available at: www.airandspaceforces.com.
31. "U.S. Space Force and Japan Successfully Launch U.S. Sovereign Space Domain Awareness Payload aboard QZS-7 Satellite", U.S. Space Force, Space Systems Command, August 14, 2026, available at: www.ssc.spaceforce.mil.
32. N. Baldauff, "Space and Strategy: Japan's National Security in Space and Europe", CSDS, December 13, 2023, available at: https://csds.vub.be.
33. *Defense of Japan 2025*, Japan Ministry of Defense, July 2025, pp. 269-270.

interoperability is central, sovereign intelligence capabilities give Japan greater freedom to collect and use information independently.

Taken together, these capability developments show that Japan is seeking greater freedom of action in areas where dependence could create strategic vulnerabilities, while ensuring that its systems remain compatible with—and can contribute to—the wider US-led security architecture.

What this model means for Europe–Japan relations

In parallel to alliance value, Japan is increasing its partnership with Europe. As Japan is seeking more equal partners who do not impose barriers to exporting advanced technology like the US[34], European countries are natural and go-to partners for Tokyo. Japan's expanding security and defense relationships can be understood as progressing through three stages: cooperation, collaboration, and integration. Japan–Europe partnerships are rapidly developing in all three stages.

Japan–Europe partnerships are rapidly developing

The first stage, cooperation, is characterized by the establishment of political frameworks for regular defense engagement. Increasingly, these agreements include space as an area of cooperation. For example, Japan and the United Kingdom have signed three Memorandum of Understanding (MOUs) on defense cooperation, the latest of which explicitly includes space.[35] This establishes political conditions for sustained engagement, but does not by itself create industrial partnership.

The second stage, collaboration, involves institutionalized defense relationships supported by agreements on information security and defense equipment and technology transfer, enabling concrete joint activities.[36] Japan's relationship with France illustrates this progression. The Roadmap between the two governments (2023-2027) includes space as a key area of cooperation, focusing on sharing more detailed SSA data and joining each other's space-related military exercises.[37] Japan's decision to station a liaison officer at the French Space Command in Toulouse demonstrates the mutual interest and trust to deepen the military side of space partnership.[38]

34. S. D. Harding, "Japan's Growing International Security Cooperation in Defense Procurement: What Does It Portend for the U.S.-Japan Alliance?", Sasakawa Peace Foundation USA, December 5, 2025, available at: https://spfusa.org.
35. "Japan-UK Defense Exchange" (MOUs signed in 2007, 2012 and 2017), Japan Ministry of Defense, available at: www.mod.go.jp.
36. N. Baldauff and Y.-K. Heng, "Evaluating Japan's Defense Cooperation Agreements and Their Transformative Potential: Upgrading Strategic Partnerships with Australia and the UK", *International Relations of the Asia-Pacific*, Vol. 24, No. 2, 2024, pp. 183-215, available at: https://doi.org.
37. "Feuille de route sur la coopération franco-japonaise dans le cadre du partenariat d'exception (2023-2027)", France Diplomatie, 2023, available at: https://jp.diplomatie.gouv.fr.
38. Ministry of Foreign Affairs of Japan, "Eighth Japan-France Foreign and Defense Ministers' Meeting ('2+2')", April 1, 2026, available at: www.mofa.go.jp.

Integration is the most advanced level of cooperation and signifies that respective industries are in the driver's seat, backed by their respective governments. Among the many examples, the partnership between iQPS—one of Japan's pioneers in building small SAR satellites—and Norway's Kongsberg Satellite Services (KSAT) demonstrates this advanced level of cooperation. iQPS is adopting KSAT's ground station services for its expanding QPS-SAR project.[39] iQPS benefits from KSAT's already established ground infrastructure for data delivery, while KSAT gains market entry to Japan. Another example is Astroscale's contract with the British Ministry of Defense. While details remain undisclosed, Astroscale UK is strengthening its position in the British market.[40] Taken together, these commercial ties show that Japan's path into European space is being opened by its companies as much as its government—a bottom-up integration that, for now, runs ahead of the institutional relationship between Tokyo and Brussels.

Conclusion

As Japanese companies drive the integration stage, at least three observations emerge that can help further Japan-Europe space security cooperation.

First, these integration examples are based on bilateral frameworks. The IHI-ICEYE partnership is with Finland; the iQPS-KSAT with Norway; and Astroscale's contract with the United Kingdom. Cooperation with the European Union, linking Japanese systems to the IRIS² constellation, is still too recent to assess.[41]

When it comes to missile defense and the related space-based capabilities, Japan's integration is only with the US. The concept-design study for a GEO satellite for HGV detection and tracking is a prime example. Requiring interoperability with the PWSA reflects an "allied by design" structure, meaning that US interests and capabilities are structurally interoperable from the beginning.[42] The MOD could consider including the partnership element in tender specifications.

In order to further integration, companies must map their core technologies to partners' needs. This is true for both domestic and international markets. Of the more than 100 space tech companies in Japan,[43] only a handful have expanded overseas. With 80% of Japan's Space Strategy Fund already allocated or being allocated, companies cannot depend on the government's subsidies. The onus is on the companies to determine needs and expand.

39. iQPS, "iQPS Signs Further Long-Term Partnership Agreement with KSAT (Kongsberg Satellite Services)", June 3, 2026, available at: https://i-qps.net.
40. TipRanks.com, "Astroscale's U.K. Unit Wins £15 Million Multi-Year Contract from UK Defence Ministry", September 30, 2026, available at: www.tipranks.com.
41. Japan-EU Summit 2025: Attachment I to the Joint Statement, Deliverables and Priorities, 23 July 2025.
42. B. McClintock *et al.*, *Allied by Design: Defining a Path to Thoughtful Allied Space Power*, Santa Monica (CA): RAND Corporation, January 30, 2024, available at: www.rand.org.
43. "Opportunities in Japan's Surging Space Industry", Switzerland Global Enterprise, June 23, 2026, available at: www.s-ge.com.

Europe and Japan appear to share similar threat perceptions in the space domain. While the US remains the only power capable of, and willing to, jointly respond to the missile-centric A2/AD challenge in the Indo-Pacific, missile threat is increasingly felt in Europe with Russia's constant missile attacks on Ukraine. Missile warning needs should not be confined only to the Japan–US alliance. ISR or space domain awareness are potential areas of cooperation. The next step is for Europe and Japan to identify, concretely, where each can address the other's capability needs, so that their partnership rests on more than a shared reliance on the United States.

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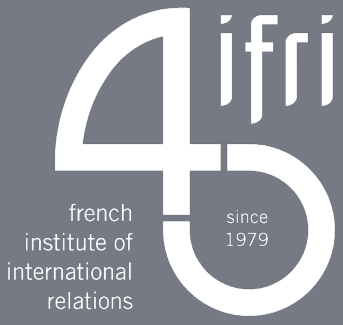
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