

IRIS² Growing Up: From Strategic Roots to Commercial Power Play

On the 21st of February 2025, Reuters reported that U.S. negotiators, pressing Kyiv for access to Ukraine’s critical minerals, raised the possibility of cutting the country’s access to SpaceX’s Starlink satellite internet system.¹ The news, later refuted by SpaceX CEO, Elon Musk, nonetheless sent shockwaves across geopolitical spheres and affected industries including the satellite communications industry, positioning European strategic autonomy players to benefit.

Starlink is used by the Armed Forces of Ukraine to coordinate and exchange sensitive data and share information with military advisers from the U.S. and NATO. Ukraine operates approximately 42,000 terminals across its military, hospitals, businesses, and aid organizations, with Poland supposedly spending upward of €75 million for terminals and subscriptions between 2022 and 2024.²

Rumours that Starlink’s coverage over Ukraine could be threatened in a similar fashion to Maxar’s EO intelligence have led to material consequences with respect to strategic autonomy.³ The European Commission has floated the idea to directly support the integration of alternative options such as Eutelsat’s OneWeb, considered the closest like-for-like LEO solution.⁴ Consequently, the parent company’s stock price rallied by over 400% in the 5 days following the Reuters report.⁵ The Commission has further hinted at expediting the deployment of GOVSATCOM (for now however limited to Member State’s pooled capabilities) or sourcing commercial capacity from SES (whose stock price soared by >50%) or Hispasat (under acquisition by Indra, whose own stock rose >30%).

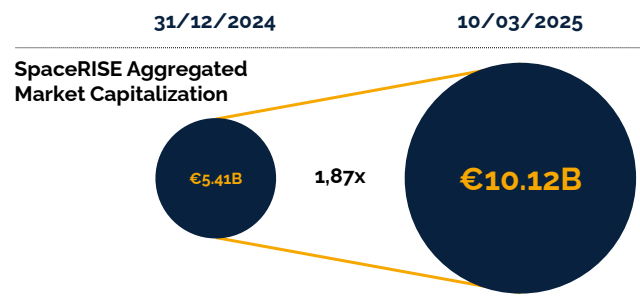


Figure 1: Evolution of SpaceRISE’ market capitalization

Following the uncertainty associated with the U.S. negotiators, the financial markets responded with waves of capital flowing into companies deemed to strengthen Europe’s strategic

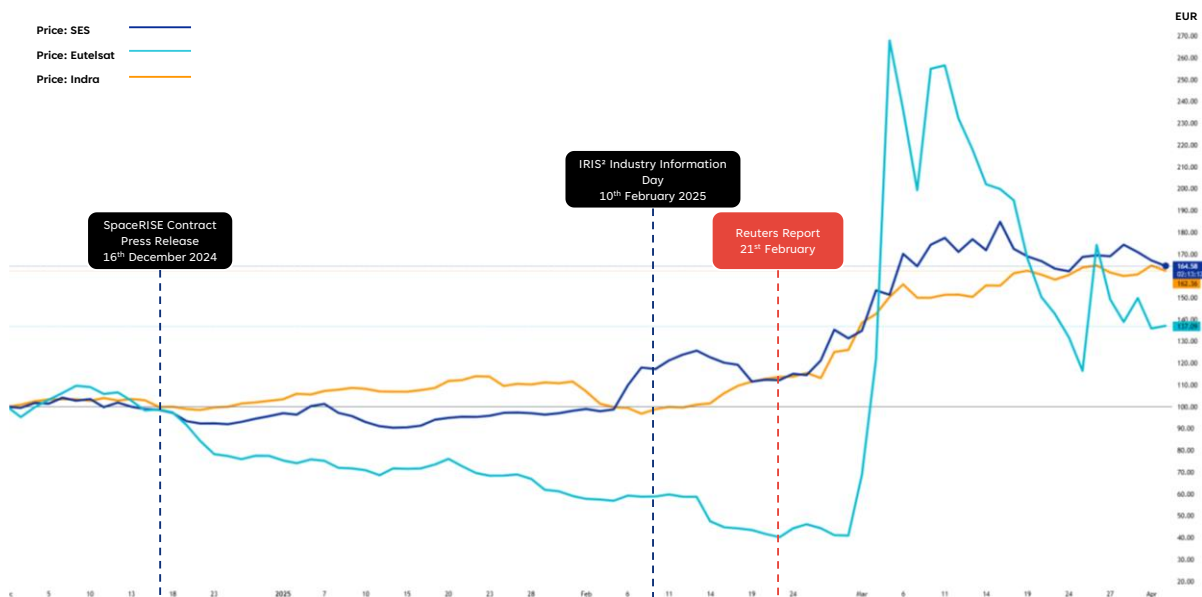


Figure 2: SES, Indra, and Eutelsat stock price, indexed at 1 December 2024 to 02 April 2025. (Source: TradingView)

¹ Andrea Shalal and Joey Roulette. “Exclusive: US could cut Ukraine’s access to Starlink internet services over minerals, say sources.” Reuters, 23 February, 2025 (Link)

² Csongor Körömi. “Poland ready to seek Starlink alternatives for Ukraine if Musk proves ‘unreliable’.” Politico, March 9, 2025 (Link)

³ Maxar still provides commercial offerings including to TVIS in Ukraine, however US government financed satellite data available for free has been closed.

⁴ Joshua Posaner. “EU to help Ukraine replace Musk’s Starlink.” POLITICO, 2 March 2025 (Link)

⁵ Gianluca Lo Nostro. “Eutelsat soars as investors bet on OneWeb satellites as European option to Starlink.” Reuters, 3 March, 2025 (Link)

autonomy, including European satcom operators. Eutelsat, SES, and Hispasat lead the SpaceRISE consortium, at the helm of the EU’s secure connectivity initiative, IRIS² and are now positioned to potentially benefit from the situation in the long-term. But will that signal be correctly interpreted and ultimately exploited? This brief dives into the backdrop of IRIS²’s formation, the material changes following the news, and the need to ensure appropriate public and private investment into the governmental and commercial elements of the European connectivity infrastructure.

1. IRIS² secure connectivity infrastructure by Europe

On the 16th of December 2024, the European Commission and the SpaceRISE consortium signed a 12-year, €10.6 billion concession contract to develop and operate the IRIS² satellite constellation.

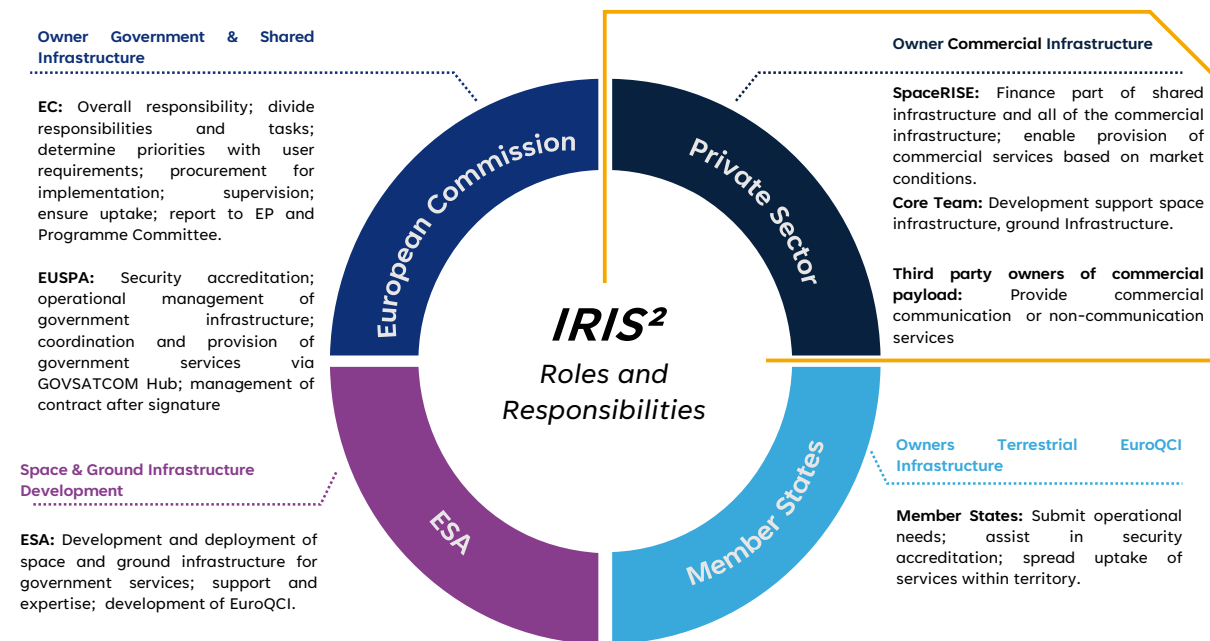


Figure 3: IRIS² Roles and Responsibilities

IRIS² underpins Europe’s institutional efforts to bolster its collective secure satellite communication system, currently at European level pooled solely through the EU GOVSATCOM framework. Pooling and sharing the existing, proprietary capacities of Member States and European commercial operators, GOVSATCOM is expected to become the first building block of IRIS². The development and operational deployment of the GOVSATCOM Hub, although already foreseen in the EU Space Programme of 2018 has been delayed but now is expected to enter into service in mid-2025. Yet, European secure satcom operators are already supporting defence efforts in Ukraine, based on commercially developed pre-cursor solutions of pooling and sharing capabilities. **This anticipates the first objective of IRIS², that is to provide an interoperable, standardised system to ensure secure, autonomous, high-quality, reliable and cost-effective satellite governmental communication services to authorised users.**⁶

The planned IRIS² constellation will consist of over 280 satellites: 264 in LEO-H, 10+ in LEO-L, and 18 in MEO, with first launches anticipated in 2029 and the last one expected by 2030. Operations will span multiple frequencies, including Ka-gov, UHF, and optical. As the Consortium System Design Authority, Eutelsat will leverage its priority spectrum in the Ku-band to enable a secure and interference-protected constellation design in tandem with optimising the LEO system design.

⁶European Union. REGULATION (EU) 2023/588 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL. EUR-Lex, 17 March, 2023. (Link)

The parallel commercial objective of IRIS² is to facilitate commercialization of services of operators that will provide mass-market solutions and non-sensitive government services, including mobile broadband and cloud services.⁷ Notably, through commercial services, IRIS² should improve secure connectivity over geographical areas of strategic interest, such as Africa and the Arctic as well as the Baltic, the Black Sea, Central Europe, the Mediterranean, and the Atlantic. The services provided under the programme should also contribute to geopolitical resilience by offering additional connectivity in line with soft power policy targets in those regions.

When the IRIS² concession contract was drawn up, one of its priorities as a PPP was the protection of the private partner's financial position. Eutelsat had €2.7 billion in debt as of the 31st of December 2024, equivalent to 3.92x its adjusted EBITDA.⁸ Investors gave the group a 65% chance of defaulting on its bonds.⁹ SES reported a €4.57 billion debt burden by the same period, with investors giving a 22% chance of default.¹⁰ In this context, the contract terms for the private operators highlighted disciplined investment, and a pre-set required rate of return. The internal rate of return of the concession is expected to exceed 10% and is said to be “underpinned by built-in protection mechanisms”.¹¹ Under the concession contract, a material cost overrun, schedule slip or technology underperformance would open the right for any of the three SpaceRISE leads to exit the programme.¹² The next review for contractual performance is scheduled for the end of 2025.

Though financial analysts were aware that IRIS² was to synergise with Eutelsat's OneWeb constellation by extending the coverage of the former and optimising the costs of the latter, the underlying structural issues were not expected to recover from the concession contract alone, even with these investor protections in place. Eutelsat's stock price leading up to the announcement for its participation in IRIS² rose by 16% between December 3rd and December 10th, before all gains were neutralised the following week. SES, who operates the O3BmPOWER MEO constellation and for which the IRIS² satellites will form the foundation for SES's next-generation MEO capabilities, similarly saw a 5.4% stock uptick in the same period, followed by a 5.6% drop – at the time **capital markets seemed to have assessed the concession contract as business as usual**, and the value-addition of the contract seemed negligible to the commercial outlook of the operators.

As **Figure 1** illustrates, Eutelsat, SES, and other stocks with an implication on Europe's strategic autonomy are at the time of writing experiencing a sustained parabolic share price increase following the geopolitical shocks mentioned earlier. Previously underpriced, IRIS² involvement is now a major factor behind investor decisions following the search for a viable European alternative to Starlink, including synergies with the operators' existing offer. This market uplift provides an **opportunity to develop the commercial elements of IRIS² to ensure the longevity of Europe's satcom ecosystem**. Operators may be expected to double down on the commercial infrastructure and fully exploit the potential related to IRIS²'s commercialisation objective, next to the institutional objective.

2. Tackling the operational hurdles ahead

Within SpaceRISE and its core team, each stakeholder is now facing the barriers that persist in the way of fully operationalising IRIS².¹³ The opportunity to exploit the tremendous shareholder equity increase on the books, by leveraging better Debt-to-Equity ratio's to refinance existing debt at more favourable rates, or raise capital by selling equity while continually attracting investment, as a means to invest in each of the following elements should not be overlooked. The recommendations

⁷ Ibid.

⁸ Eutelsat. 2024-25 Half-Year Financial Report. Eutelsat Communications. (Link)

⁹ Euan Healy. “Investors fret over Eutelsat and SES finances as Starlink threat looms.” Financial Times, 7 February 2025. (Link)

¹⁰ Euan Healy. “Investors fret over Eutelsat and SES finances as Starlink threat looms.” Financial Times, 7 February 2025. (Link)

¹¹ SES. “SpaceRISE signs concession contract to deliver Europe's IRIS² connectivity network.” SES Communications 16 December 2024. (Link)

¹² Peter B. de Selding. “Europe's Iris2 broadband constellation schedule: A 4-year high-wire act for a likely impossible deadline.” Space Intel Report, 18 December 2024. (Link)

¹³ The core team being made up of Airbus Defence and Space, OHB, T-Systems, Telespazio, Thales Alenia Space France, Thales SIX, Orange, and Hisdesat.

that follow ensure IRIS² becomes more than a government secure connectivity infrastructure, but becomes a benefit to the European space sector and its competitiveness as a whole.

3. Schedule and cost risks

With a first launch by 2029 and full operational services planned for 2031, IRIS² faces extremely tight margins on time, **necessitating design freezes very soon**.¹⁴ On the critical path of IRIS² are several technologies that ESA will help develop as the Commission-assigned IRIS² Qualification Authority. ESA has started work immediately on low-TRL components, including digital beam forming, on-board processors, and on-board computers, as well as other components, such as the satellite electric thrusters and their 100-Gbps-throughput optical inter-satellite link terminals.¹⁵ Fast-tracking these development contracts does however not come without costs. Authorizations to Proceed (ATPs) for IRIS² satellites' on-board computers and their digital beam-forming antennas, will be signed with Thales Alenia Space and Airbus Defence and Space following direct negotiations to save time that might have been lost in following the standard competitive-bid process.

The experience from the U.S. SDA's own delays feeds into these decisions; SDA understood the value of SMEs and startups as sources of innovation at a risk, the failure of several emerging companies to ramp up production of items including on-board electric thrusters and optical inter-satellite links and inability to raise capital for production development at the speed required by their contracts, laid at the root cause of SDA's delay-related issues.¹⁶ For IRIS², exactly those components, the electric thrusters and 100-Gbps-throughput optical inter-satellite link terminals, will be fast-tracked for contractors in the coming weeks following a competition. This urgency also further favours larger contractors, who may use the aggressive timeline to prioritise their products over new solutions.

Still, considering the size and complexity of the programme, delays are not unlikely. If not operational by 2031, questions remain on how the EU space or other programmes may cover additional cost, including related to delayed start of service (and revenues) and especially given that such extra budget needs may only become fully visible during the next MFF and may be difficult to anticipate.

4. Ensuring innovation through startup & SME involvement

A programme under tight deadlines is less likely to integrate small and NewSpace companies with perceived or actual less mature production capabilities and technologies. Yet, a balanced approach to also include such companies is **essential to leverage these sources of innovation and dynamism**. As a first step and dependent on the funding availability under the MFF, the Commission has carved out an option for a dedicated space for startups and SMEs through a low-LEO constellation of at least 10 satellites— (co)financed by the Commission—to serve as a testbed for new technologies from emerging players. Yet the innovation ecosystem must have its priority elevated to ensure competitive and future-proof technological solutions, and to avoid earlier mistakes in the launcher sector (reusability) and satellite services and manufacturing (NGSO).

For the scope under the ESA Partnership Project, SpaceRISE has committed to allocating 10%, with a target of 15%, of ESA's total contract value to SMEs. Additionally, a minimum of 10% of the total ESA contract will be awarded to companies outside the LSI group and Core team, excluding SMEs. However, SMEs and startups, to qualify for the procurement process, **must demonstrate near-immediate deployment readiness, established manufacturing capabilities, and an MRL of at least 7**. Given IRIS²'s focus on procurement rather than R&D, non-recurring engineering costs must

¹⁴ Laurent Jaffart, Director of Connectivity and Secure Communications at the 17th European Space Conference, 28 January 2025.

¹⁵ Peter B. de Selding, "EU Commission on Iris2 multi-orbit constellation: Are we ready to compromise? No. But we'll accept tradeoffs if needed". Space Intel Report, 11 Feb 2025, ([Link](#))

¹⁶ Peter B. de Selding, "Europe's Iris2 broadband constellation schedule: A 4-year high-wire act for a likely impossible deadline." Space Intel Report, 18 December 2024. ([Link](#))

be kept low. Strict technical and production requirements will shape the LEO-low shell competition, as for all higher-energy orbits Thales Alenia Space, ADS, and OHB are already considered baseline providers.¹⁷ An innovation programme should be established at ESA next to IRIS², to ensure the timely and continuous availability of innovative solution across and beyond its first generation.

4.1 Warranting military requirement integration

Today, defence and security considerations are key when discussing IRIS², ranging from the protection of critical infrastructure, border and maritime surveillance, and crisis management. It aims to support EU external operations and strengthen military connectivity, crucial for Command and Control (C2). The constellation will feature secure military/government K-band links and develop military Ka-band terminals alongside supporting ground infrastructure. It will also offer a transparent mode, enabling militaries to use existing secure waveforms seamlessly.

The integration of commercial capabilities with military services signifies an elevated security threshold for the provided service, requiring the integration of military requirements into the next design phase of IRIS² at potentially significant cost. MODs should be more closely involved and be committed to these military requirements, ensuring IRIS² meets stringent standards while mitigating vulnerabilities in the PPP model through robust agreements. In this context, some military users have **expressed concerns** about their involvement in defining its requirements and their overview of existing plans, and especially on the fact that **their operational needs and standards may not be fully integrated into the system's development**.

Ensuring close collaboration with military stakeholders on the HardGov service will be crucial to aligning IRIS² with real-world military needs, and additional investment to realise these strict requirements can be expected. In this relationship, a communication pathway similar to EU SST, to ensure a multilateral cooperation at the intersection of military and commercial actors is currently lacking.

4.2 Launch timeline & European launcher availability

The launch timeline is currently dictated by the fact that Ariane 6 and Vega C remain the only operational options to launch a payload aboard a European rocket. Ariane 6 has reached a new milestone with its first commercial flight on March 6th, 2025. The rocket's estimated annual flight rate is 10, requiring at least 13 Ariane 6 flights to fill the IRIS² constellation.¹⁸

However, with a backlog of 30 launches—including 18 for Amazon's Kuiper constellation—Arianespace faces a **recognised challenge in ramping up to the required cadence and freeing up capacity for IRIS² launches in 2029**.¹⁹ Meanwhile, Vega C has returned to flight, completing three successful launches in 2024. Future developments, including a new integration facility in Kourou, and the development of Vega E (with its inaugural flight no earlier than 2027) aim to increase launch rates and provide additional capacity for LEO missions.²⁰

While 2026 and 2027 being critical for clearing Ariane 6's backlog, the entire European launch ecosystem is set to expand. Rocket Factory Augsburg, ISAR Aerospace, PLD Space, and others are expected to begin offering regular services by the decade's end. The reality of government-sponsored launch, however, means that requirements for flight heritage and demonstrated reliability might need to be adjusted if these NewSpace launch service providers are indeed to be considered as indicated by the European Commission. IRIS² should be accompanied by a further amplified European effort to develop a resilient and competitive European launcher sector.

¹⁷ SES Astra SA, Eutelsat S.A, Hispasat S.A. Industry Info Day, 12 February 2025.

¹⁸ ESPI in-house estimates for payload mass with OneWeb analogues. ESPI launch database.

¹⁹ Andrew Parsonson. "ArianeGroup Already Working to Secure IRIS2 Launch Contract." European Spaceflight 13 January 2025.

²⁰ Jeff Foust. "ESA and Avio sign contracts for Vega upgrades and new launch." SpaceNews, 19 December 2024 (Link)

5. The identity of IRIS²?

Central to IRIS²'s identity is its **dual commitment to government and commercial services**. Far from being a purely institutional programme like Galileo and Copernicus, or purely a military or crisis-communication asset, IRIS² will power both HardGov and LightGov/commercial connectivity, while boosting commercial broadband access globally. This broad service mandate underscores the programme's role as the **continent's institutional baseline infrastructure, as well as a catalyst to develop a more independent, competitive, and innovative European SatCom ecosystem and commercial offer**.

Geopolitical actors are **attempting to exert an economic and strategic stranglehold on Europe**. SpaceX's Starlink continues to expand into European aviation, maritime, and eventually, government connectivity. Its next generation "V3" satellites are a testament to the speed of innovation – promising transfers of up to 1 Tbps downlink and 160 Gbps uplink.²¹ It is up to the SpaceRISE consortium, to strengthen their commercial offerings. Using IRIS² as the backbone of business continuity presents an opportunity to build more aggressive commercial strategies while failure to do so risks long-term market decline. This will not be possible without clear signals from European capitals affirming the commitment to European connectivity solutions for their operations and regulatory support to enable new commercial markets in user industries (e.g. automotive) and speed up innovation.

IRIS² needs to be much more than a constellation delivering governmental services. To maximise its true potential and impact, Europe must adopt a two-pronged approach, integrating IRIS² under the lead of the EU as an asset into its security and foreign policy strategies, and, with the expertise of ESA, industry, and private financiers, ensure its ability to be developed into an economic enabler to reshape Europe's role in global connectivity and industrial competitiveness.

While it is a symbol of Europe's commitment to self-reliance and bulwark against foreign dependency, **all actors need to acknowledge the parallel importance of both objectives behind the programme – governmental and commercial**.

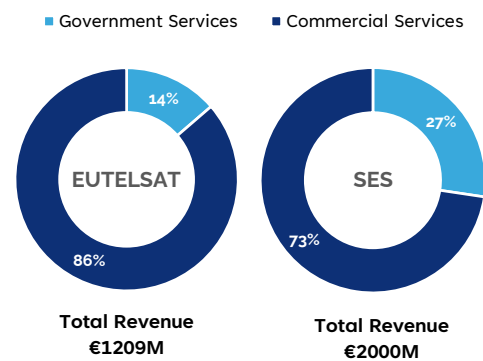


Figure 4: Eutelsat and SES end of 2024 revenue by client type. (Source: Eutelsat, SES)

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²¹ SpaceX. Starlink Progress Report 2024. Starlink Stories (Link)