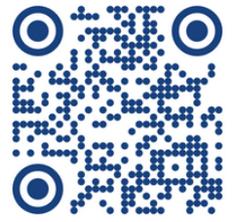


# FutureSpace Strategic Foresight Workshop Report



## Future(s) of European Strategic Autonomy and Launchers

September 2024

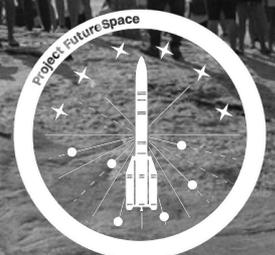
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## About FutureSpace

FutureSpace is a 5-year research project at the Department of Science and Technology Studies (STS) at the University of Vienna. The project is led by Assist. Prof. Nina Klimburg-Witjes and supported by a Starting Grant of the European Research Council (ERC).

FutureSpace studies how practices of European integration and their underlying values and tensions inform European outer space activities – and how imagined space futures influence socio-political practices on Earth. We explore these questions by focusing on a core project where these issues are negotiated: the joint European rocket Ariane. FutureSpace takes Ariane as a unique lens to provide insights into the coproduction of envisioned space futures and techno-political orders on Earth.

## The Workshop

FutureSpace hosted a strategic foresight workshop on the *Future(s) of European strategic autonomy and European launchers*. The workshop was organised and moderated by FutureSpace researcher Philipp Kürten, and brought together 13 distinguished representatives from the European space sector, including experts from ESPI, ESA, national space agencies, academia, think tanks, and other research institutions. Held in September 2024, participants conducted a *Causal Layered Analysis*, a strategic foresight method rooted in Critical Futures Studies, to explore the deeper structures shaping our future-thinking about space. The workshop was kicked off by a keynote address from ESPI Director Hermann Ludwig Moeller offering insights into the concurrent imaginations shaping Europe's strategic autonomy.

The workshop is part of FutureSpace's broader research into the futuring practices within the

European space sector. FutureSpace aims to understand how visions of the future in outer space are imagined, negotiated, and realised: What shapes the collective understanding of Europe's future in space? In what ways can a better understanding of how futures are imagined, negotiated, planned, communicated, realised, contested, maintained or reshaped, support space policy and strategy? At FutureSpace, we believe that examining these socio-technical structures is essential not only for academic inquiry, but also for developing actionable future scenarios that can guide Europe towards more informed and resilient long-term strategies and policies.

## Questions We Addressed

- What systemic, ideological, and cultural structures and narratives underpin our future-thinking about European space policy?
- How can thinking about the future in different ways help to question the dominant narratives surrounding space policy?
- How can we reimagine the future of European strategic autonomy in space by exploring alternative narratives, and what benefits might this bring to long-term policy and strategy?
- How would reconceptualising Europe's space strategy – in the light of systemic, ideological and cultural challenges – influence more positive futures?
- How can more inclusive narratives for space exploration, like the notion of shared European identity, strengthen Europe's future in space?

## Deconstructing European Strategic Autonomy

In the first part of workshop, participants deconstructed current future visions concerning European strategic autonomy and Europe's future in space. To uncover the systemic, ideological, and cultural challenges, narratives, and tensions shaping the future of European strategic autonomy, we analysed the underlying structures influencing our future-thinking across multiple layers. During this part of the workshop, our focus centred on the question: "How does the current future of European strategic autonomy look like?"

Starting off, participants reflected on the current state of Europe's space sector through evocative phrases such as "Not Really United in Space", "Space from the Passenger Seat: Europe's Hitchhiker Guide to the Stars" and "Dwarfs and Giants: Europe 'Running Behind' the Major Players", encapsulating a collective sentiment that Europe is struggling to position itself as a leading actor in the global space race.

## United or Fragmented? What is Europe?

To understand what shapes this sentiment and what fuels the current challenges of European strategic autonomy, participants identified a number of underlying systemic causes, such as the absence of a cohesive European idea, which they felt contributed significantly to the current struggles. Participants noted that the absence of shared visions and strategies reflects a deeper issue of European identification. The question of what Europe truly *is*, emerged early on and remained a recurring theme throughout the workshop.

This problematization was summed up by a participant who stated: "First of all, it's a question of what is Europe? We don't have a common European strategy. We have diverging member states' interests, different commercial interests, and there's a lack of unity."

The lack of common understanding also extends to strategic autonomy. Participants pointed out the differing interpretations of strategic autonomy across European nations, with one noting: "We do not have, in Europe, a shared and agreed upon understanding of strategic autonomy. Different countries understand strategic autonomy in different ways. Because of history, because of traditions, because of the political and institutional settings in Europe. This is one of the big difficulties in Europe."

This lack of cohesion and common understandings was seen as a fundamental barrier to Europe's progress in space. The tension between the ideal of European unity and cohesion versus national fragmentation and inner-European conflicts was summed up by a participant who noted: "I think in Europe, the issue is, that we are sometimes working in a competitive mode. The big challenge is how to become more coherent and to have common policies and common approaches." Another participant noted: "Then we have the issue with national space programs. A major challenge is to see how we can use national efforts to better support the efforts at the European scale and to work together and not against each other."

This dichotomy is particularly highlighted by discussions on the geographic return principle, which was identified as both a unifier and a source of division.

According to one participant, the lack of unity and strategy is “very visible when we look at the discussions of geo-return”. And while there was consensus that geo-return requires some sort of revision, participants also acknowledged the political value of such a procurement system for the unification and integration of Europe.

As another participant noted: “Geo-return was designed 50 years ago and it should be discussed, it can be improved, and it can be brought in line with the new landscape. But let's not forget that the technical European capability that we have developed over the last 50 years in Europe is also a result of geo-return. Geo-return that did not hinder Europe to have some world class missions. And geo-return is a tool for solidarity. The overall European effort would not have been possible without a mechanism such as geo-return.”

## Conflicting Visions: The Two Body Problem

At a deeper level of analysis, participants examined the underlying worldviews and ideological structures shaping the ongoing challenges of European strategic autonomy. A key point of discussion was the friction between ESA and the European Union: “ESA and the EU are not friends”, a participant noted.

One participant described ESA as a “technological giant but a political dwarf”, while the EU was seen as a “political giant but a technological dwarf”. This imbalance creates a disconnect between Europe’s political ambitions in space and its technological capabilities. As another participant explained, this makes it challenging to form a unified strategy: “The political giant does not have a clear vision of how to approach space, and

while the technological giant knows how to execute it programmatically, it isn't the one to dictate the political direction”.

Returning to the broader initial question of what Europe truly represents, a participant remarked, “there are different layers of what really Europe is and how all these organizations can work together and can form a coherent strategic perspective. And I think it is still a long way to go until we have a new perspective on how we can integrate these perspectives”. However, the challenges extend beyond the institutional dynamics of ESA and the EU, as this discord is further complicated by the fact that “within those bodies, you have the member states with different views and elections and priorities”, making it difficult to achieve some sort of political alignment and a unified approach to space policy.

This fragmentation extends to Europe's ability to speak with a unified voice on space matters. “Who speaks in Europe for space?” one participant asked. “It's difficult to inspire people when we lack a cohesive council or leadership that integrates all perspectives. Not only do we have ESA and the EU, but we also have different countries with different strategic, historically grown strategic perspectives. Reconciling the cultural and strategic differences of two large institutions, as well as multiple nations, makes it incredibly difficult to facilitate a single, strategic vision for space.”

## Risk Culture in Europe

In exploring the deeper cultural narratives shaping European Strategic Autonomy, the concept of risk emerged as a key issue. Europe’s cultural aversion to risk, especially compared to the U.S., was seen as a potential barrier to innovation.

One participant observed, "In Europe, we want to avoid risk at all costs. And in the U.S., maybe risk is seen as something that holds opportunities". This risk-averse mindset impacts how space projects are developed and implemented, and results in a slow decision-making process in Europe, which, seeking to accommodate the interests of all actors, can unintentionally stifle progress. As another participant noted:

"In the U.S., they are less averse to risk and don't mind hurting the interests of some actors. There is this saying that in the long term, some actors maybe need to die for new actors to emerge. And in Europe, they are very afraid of some of the old actors dying. Maybe risk is actually very important in this era of new emerging technologies."

The reluctance to embrace risk and allow new players to emerge was seen by many as hindering Europe's ability to stay competitive in the rapidly evolving space sector.

## European Pride in Space

Touching up again the early question about European identity, a particularly interesting discussion also addressed the absence of "European pride" in space exploration. While individual countries often feel national pride when their astronauts achieve milestones, such as missions to the ISS, a unified "European pride" remains elusive. As one participant put it:

"There is national pride if German, French, or Danish astronauts go to the ISS... but it always carries this national factor. There's no European pride, which is evident when compared to other great space nations".

This cultural divide complicates efforts to create a cohesive European identity in space.

In this regard, another participant recalled former ESA Director General Jan Woerner's vision of a "European astronaut with a German [or other] passport", symbolising a stronger sense of European unity.

## Reconstructing European Strategic Autonomy

The insights gained during the first part of the workshop laid the foundation for the second half, where participants shifted their focus to explore potential solutions for overcoming the examined challenges and tensions of European strategic autonomy. The aim was to imagine and to 'reconstruct' a more cohesive and forward-looking future of European strategic autonomy. The central question for this phase was: "How can the future of European strategic autonomy look like?"

This second part helped identify the narratives, ideologies, and systems that would need to adapt or be altered (perhaps only slightly) to foster a more integrated, ambitious and unified European space sector and a more promising outlook on European strategic autonomy. The reimagined future would require not just new policies but a more profound shift in Europe's collective identity and its approach to cooperation. By reconstructing these issues across different layers, our aim was for participants to gain a clearer understanding of the systemic, ideological and cultural challenges that Europe must address to strengthen its position in space.

## New Narratives for European Space

To kickstart this reconstructive part, we presented a scenario set in 2050, where outer space activities had advanced significantly.

Participants were tasked with imagining Europe's role in this future world. Creative interpretations of these future visions were expressed through various proposed headlines and slogans, such as "2050: United States of Europe, European Space Development Agency and Network of European Space Agencies present European Space Strategy 2070," or the more philosophical "History does not repeat, but it rhymes." The latter drew parallels to the enthusiasm and optimism of the Apollo era, suggesting Europe could benefit from similarly ambitious and unifying narratives. This exercise framed a collective exploration of how European strategic autonomy could be reshaped, laying the groundwork for participants to envision a future that, while addressing current frictions, emphasizes a tad more unity, cooperation, and optimism.

Participants reflected on how new narratives of European identity and values could evolve to foster greater collaboration and progress. The idea that "space is not an option but a necessity" emerged as a strong narrative and the notion of space exploration as a "humanity-wide endeavour" resonated throughout the conversation. As one participant noted: "If we have made it to space, we have succeeded as humanity. And we can only meet the challenges if we are united. It's not a question of time. It's a question of cooperation. It's a question of transparency. It's a question of openness."

This notion was further deepened by a reflection on space as both a path to progress and a mirror for Earth's own challenges. As one participant eloquently put it: "If I were frozen in ice and woke up in a few hundred years, my first question would be, do we have a permanent presence in space? And if the answer was yes, I would take it as a sign that humankind has truly been successful."

Several participants emphasized the need for a more inclusive and positive narrative, reminiscent of NASA's role in turning space into a symbol of peaceful cooperation. One participant noted, "We need a positive narrative... like when Neil Armstrong said they came 'for all mankind'", which was framed to some degree as "inclusive to all people". Reflecting on the role that Europe should play in space, one participant suggested: "We should desire to use space to maintain humankind and to build an ideal, perfect world", underscored the broader question of what Europe stands for and what it is: Europe needs to be "a force for good", which requires a clearer and more cohesive identity, both on Earth and in space, as one participant noted.

By reframing Europe's space efforts as a way to build "unity in plurality," participants envisioned a more coherent identity for Europe—one that transcends nationalistic pride and emphasizes shared goals. "Space activities could actually be one of the factors that help promote a transition from national to European identity," as one participant said, reflecting on space's potential as a unifying force.

## Harmonising the European Vision

To harmonize a coherent European vision, participants then grappled with the complex relationship between ESA and the EU. The workshop revealed a strong desire to resolve the institutional fragmentation that currently paralyzes Europe's space efforts. Some participants advocated for a unified body: "These two bodies are not ideal for Europe, and I think we should not proceed with that pattern" or "My ideal world in 20 or 25 years is that we have one body, with the same member states... we would save a lot of resources".

Another participant similarly observed that with a unification or effective cooperation between ESA and the EU "we would be rid of a lot of problems". However, while there was consensus on the need for greater cooperation, the ideal future structure for space governance in Europe remained open to different interpretations. Some participants argued that ESA's independence from military and security issues could become an asset in a cooperative, global future and therefore cautioned against merging ESA and the EU too hastily. ESA, with a distinct role as a peaceful, non-military, civilian agency "could be an important and interesting tool in the geopolitical sense, as it can provide a bridge to different countries and different cultures". Similarly, an ESA representative noted, "What is our vision? ESA must not have the same vision for Europe as the EU".

## The Future of Geo-Return

When the workshop progressed to a normative reimagining of systematic structures that would be necessary to enable a more unified and coherent European space future in regard to strategic autonomy, the debate focused heavily on the geo-return policies. While participants envisioned a future where geo-return could be phased out or restructured, many acknowledged that its evolution is closely tied to the broader political landscape, particularly the tension between an intergovernmental setup and a more unified and politically integrated European framework. In the foreseeable future, geo-return will continue to play a crucial role in incentivizing member states to participate in space programs, making its modification or elimination contingent on deeper political integration. "If the EU becomes a unitary political system, we hopefully won't need geo-return, but in the current system, we can probably update it to some more efficient

procurement method, but not get rid of it", remarked one participant. Another perspective on the future of geo-return emphasized its value in certain areas: "Geo-return makes sense for some programs like ESA's science programs, as it motivates member states to participate. But for other programs, its necessity can be questioned." This perspective was expanded upon by another participant, who questioned whether a long-term future of outer space developments might transcend geo-return altogether. "Can we, for 2050, expect a real space economy comparable to a terrestrial economy? If this is the case, then I think we will not see the principle of geo-return anymore".

## A Future European Launcher Ecosystem

Towards the end of the workshop, we steered the debate towards imagining actionable outcomes regarding European access to space and launcher ecosystems for the year 2050. The consensus was that Europe would need its own domestic launch capabilities by 2050. Regardless of the ecosystem, whether it is Ariane 7, Ariane 8, or another family of space transportation systems, Europe must retain autonomous access to space as a matter of critical infrastructure. For 2050, participants imagined a European space transportation ecosystem that is robust, interconnected, and celebrated, "a family of space transportation systems that are interlocking and working together", with multiple spaceports and in-space transportation options, private and public collaborations, all contributing to Europe's strategic autonomy and working together seamlessly. This ideal future was summarised with a proposed newspaper headline that read:

"European launcher network 'Space Launch Europe' celebrates its 2000th successful launch." As one participant noted, "to get to that point, it needs European space ambition that we hope to enlarge in the future".

## Remarks on the Workshop

The workshop proved to be a dynamic space for critical thinking and for encouraging participants to reframe their understanding of the future regarding European strategic autonomy in space. By moving through a Causal Layered Analysis, we deconstructed existing narratives and explored the structural layers that shape our future-thinking in regard to strategic autonomy and Europe's position and identity in outer space. The second half of the workshop, which then involved reconstructing a more normative, better future, allowed participants to reimagine European space ambitions in new, progressive ways. This process highlighted the importance of shifting perspectives and imagining how today's decisions and actions might resonate in the long term. As one participant noted: "It takes a strong Europe. If we in Europe cannot agree and cannot come together, if we end up in national competition, we cannot be a force for good. European identity is, in a way, also a national identity. And I think that's the purpose of this workshop, to see how we can get to this point."

We hope that the workshop inspired critical and imaginative thinking by encouraging participants to question conventional thinking and move beyond surface-level understandings of current issues. By exploring deeper systemic, ideological and cultural layers, we aimed to help participants gain insights into how underlying narratives and structures influence our future thinking in regards to European space policy. We also aimed to raise awareness of the different

temporal structures that underlie our understanding of the future, yet typically go unexplored and are unsuspectingly taken for granted. The deeper we ventured into deconstruction, the more enduring and resistant to change some narratives became, highlighting the challenge of encouraging long-term shifts in the foundational narratives and structures of European strategic autonomy in space. Picking up on his notion of the missing dinosaur space agency, one participant remarked:

"One of our ideologies or characteristics is short sightedness. So, the dinosaurs didn't have a space agency. Now we have one. And [I wonder] how will future survivors of a mass extinction event maybe look upon us and say: How did we face this problem? And why did we fail?"

This reflection wonderfully underscored the importance of overcoming short-sightedness and focusing on long-term futures to create meaningful and lasting change. Finally, we hope that this process created awareness about the situatedness of knowledge about the future and thus encourages the development of adaptable and more resilient strategies, better suited to navigate uncertainty and discontinuity.

However, the workshop also uncovered some notable challenges. It proved much easier to deconstruct the present issues of Europe's future of strategic autonomy than to envision a better future for 2050. Imagining solutions to current frictions and tensions, and how they could be overcome within the next 26 years, proved to be more difficult than pinpointing to current problems.

As one participant noted:

"I think there are historic reasons that make it difficult for Europe to look to the future,

because historically, space in Europe was seen as a civil matter. But I think there is some sort of *Zeitenwende*; there is a new strategic awareness that Europe can no longer be caught in the middle between the East and the US, but needs its own strategic view.”

In this workshop, we aimed to foster a mindset that encourages participants to think long-term, beyond immediate technological or political obstacles. By reconstructing visions of Europe’s future role in space, we hope to guide more inclusive, cooperative, and forward-looking strategies, ensuring Europe’s sustained role as a space-faring power.

## FutureSpace Team

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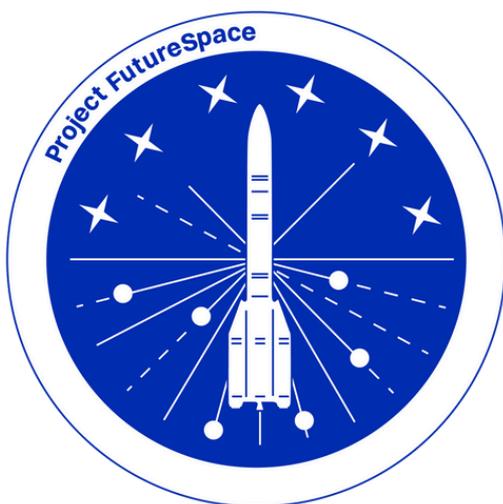
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