Governance to boost space business across borders in the Aurora region

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Due to rising global temperatures and growing geopolitical tensions around the Arctic, the Aurora region is gradually becoming a frontier for the dual use of new space solutions, for both civilian and defense purposes. Instituting cross-border coordination to govern space business activities in the region is not only for business renewal and growth, but it can also contribute to Nordic resilience and preparedness. We in the AuroraSpace project conceive governance as a system of norms that enact a manner of doing or an act of governing in a given way [1], [2], where the co-producers are different kinds of actors from Finland, Norway, and Sweden. In the context of the new space economy, actors may include state agencies (government organizations) as well as firms (corporate organizations) within large industries like defense or small- and medium-sized enterprises (SMEs) that may operate across different industries like agriculture, fishing, defense, and aerospace [3], [4].

These organized actors in the Aurora region often coordinate to enact a form of governance that influences the relationships between them, which tend to aid or impact each other. Accordingly, governance can be viewed as dynamic interactions among these organized actors [1], [2], including their resources, interests, and power, along with the arena of negotiation, rules of the game, and policies to support legitimate goals of boosting space business across borders in the region. Accordingly, we report on our understanding of current governance activities in the Aurora region to boost space business across borders and to initiate a conversation in both Nordic and general EU discussions. We highlight cross-border cooperation that moves beyond the current national regulations, policies, and strategies.

Our reporting is structured into two parts. First, we provide shared gaps, challenges, and opportunities around governance across borders in the region based on desk research (see Appendix) and our observations across work packages. Second, we then propose some directions or recommendations for further consideration.

Shared gaps, challenges, and opportunities across borders in the region based on desk research and observations

Current governance activities in the Aurora region are heavily based on individual national regulations, policies, and strategies. While each country brings its own strengths in space activities, there is “less coordinated connection across borders” between Finland, Norway, and Sweden. This particular conversation is relevant when it comes to deliberating cross-border cooperation to boost space business in the region through increasing value chain participation [5], [6].

We observed common patterns across borders: firms operating in the region are good at generating ideas into specialized technologies but struggle to create repeat customers and scale [7]. In this region, Finnish firms seem to experience a gap between early-stage support and

larger funding rounds; Norwegian firms may need stronger industrial scale-up around infrastructure and operations; and Swedish firms may want to transition from grant-funded development to commercial revenues. We also observe that the national strategy of each country has a core focus on international cooperation. But they put very limited emphasis on cross-border cooperation within the Aurora region, although the region shares some commonalities.

The Aurora region is characterized by the same challenges around geopolitical adversity in land, sky, and marine environments, as well as similar conditions, including large maritime zones, sparsely populated areas, long coastlines, and Arctic and sub-Arctic conditions. It also shares some commonalities, as it has a high level of trustworthiness, dependence on digital infrastructure, and strong public sector demand for climate, security, and preparedness services. These shared challenges and commonalities enable the region to serve as natural markets for Earth observation, secure communications, resilient positioning, maritime domain awareness, ice and weather monitoring, forestry, fisheries, emergency preparedness, critical infrastructure monitoring, and defense-related services. Accordingly, the region is not just a supplier of space-enabled solutions, but also has its own demand, giving firms an opportunity to use it as a testbed and reference market for space-enabled capabilities and internationalization. Although businesses are not necessarily coordinated and less connected, firms within the region can potentially complement each other.

A recent report on Nordic space-related technology suggests that there are collaborative opportunities among firms within the region in upstream, midstream, and downstream activities in the wider value chain in the space domain [7]. Firms in Sweden have broad engineering depth, infrastructure, and downstream potential, with strong capabilities in spacecraft subsystems, launch interface, aerospace, satellite communications terminals, radio frequency systems, ground networks, edge computing, earth observation, and dual-use and defense-adjacent technologies [7]. Firms in Norway have strengths in operational infrastructure for (sub)orbital launch, ground segment, global data downlink, satellite operations, maritime monitoring, and defense-related test environments [7]. Firms in Finland have strengths in Earth observation, synthetic aperture radars (SAR), satellite communications, non-terrestrial networks, global navigation satellite system (GNSS), positioning, navigation and timing (PNT), space weather, meteorology and geospatial data, small-satellite platforms, propulsion and mission architecture, data services, and resilience-oriented applications [7].

Such collective capabilities can then be applied to other regional markets in Europe and Asia, and beyond; internationalization of interconnected firms involves providing a competitive advantage: meaning, internationalization of a network of coordinating firms from the region, not just single firms. Therefore, there is an urgent need for coordinated governance.

Proposed directions/recommendations for market-enabling and connectedness in the region

We see an opportunity to boost space business across borders in the Aurora region through necessary governance that may enhance firms' participation in the wider space value chain

activities. Accordingly, we outlined some governance directions/recommendations for further consideration, emphasizing market-enabling and connectedness [5], [6]. Our proposal hopes to boost space business across borders in the Aurora region as an outcome of interest.

Proposed recommendations	Key activities, actors, and starting points
Immediate activities (in 0 – 3-year periods)	
Market-enabling	
Establish joint public procurement calls	Government agencies, universities, and research organizations may want to explore opportunities for coordinated or joint procurement where feasible, given that existing legal and institutional constraints around public procurement. Possible coordination for regional purchasing commitments through joint public procurements can enable firms to gain first or repeated customers and contracts. It may also help to identify shared needs of public and private users in the space value chain across the region. It may thus facilitate an immediate match between existing supplies (e.g., technical solutions) and demand (e.g., cases) in upstream, midstream, and downstream activities.
Build a regional demonstration program	The ability to demonstrate space-related solutions across borders can reduce the gap between pilot projects and having first customers. Interreg Aurora, national innovation and commercial agencies (e.g., Innovation Norway, Business Sweden), SMEs, large firms, and ESA BICs and Phi-Labs may want to fund 2-3 annual demonstrations related to regional characteristics (e. g., maritime awareness). The annual Jammertest event at Andøya is a good example in the area of GNSS, resilient PNT, and secure communications.
Connectedness	
Map participating firms in the value chain activities	Identify capabilities, complementarities, and gaps across firms to connect across value chain activities to increase awareness of partnership opportunities. Respective national agencies, universities, Nordic Innovation, and Interreg Aurora may want to coordinate to organize thematic groups around key technologies and applications in each value chain activity, including upstream, midstream, and downstream. Our AuroraSpace business portal can be a starting point (https://auroraspace.eu/companies/) along with current activities of Space Nordic.
Take initiatives for cross-border networking and matchmaking	Facilitate interactions among firms, national space and innovation agencies, and investors to enhance inter-firm collaboration, funding opportunities, and value chain linkages. SMEs or larger firms and government agencies may want to organize dedicated value chain-specific networking and matchmaking sessions (e.g., rocket launching or resilient GNSS). The annual Winter Satellite Workshop organized by Aalto University can be a good platform.
Long-term activities (in 3-7 years period)	
Market-enabling	
Align national policies and strategies for regional growth	National agencies and ministries may want to emphasize harmonizing policies and strategies to enhance firms' participation in value-creating activities within the region to lower barriers for cross-border operations and partnerships. Constructing value chain-specific policies and strategies for regional growth within international cooperation can be a starting point. The primary focus could be to coordinate national funding instruments and follow-on support (e.g., commercializing skills for SMEs beyond engineering) along with ESA BICs and Phi-Labs.
Create joint research and innovation projects	National space and innovation agencies, universities, NordForsk, Nordic Innovation, and Interreg Aurora may want to coordinate to initiate and fund

	2-3 flagship collaborative projects involving firms (both SMEs and large) from the region. These coordinated projects would improve participation in value chain-specific activities and enhance cross-border supplier-customer relationships.
Connectedness	
Establish a regional space cluster for cooperation	Establish a loosely coupled cross-border coordination cluster to institute network governance for competitiveness by bringing complementary strengths of firms across countries in the region. Initial focus could be the stronger integration of upstream, midstream, and downstream activities within the value chain and support international expansion of regional firm networks within each chain rather than individual firms. National space agencies and firms would loosely come under one umbrella to increase participation in global space value chains by promoting joint regional offerings to international markets and increasing access to larger contracts.
Build a shared infrastructure across borders	National agencies and ministries may want to coordinate with universities and firms (both SMEs and large) to develop a regional shared infrastructure that strengthens regional resilience and complements existing national and European capabilities. Complementary may relate to rocket production, cloud/distributed computing infrastructure, launch, satellite constellations, resilient GNSS and PNT, secure communications, testing facilities, ground segment, and local data centers. Countries' investment in developing shared infrastructure across borders would enhance firms' participation in the value chain and sustain inter-firm cooperation.

References

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Appendix: Sources used for desk research

Nature of understanding	Sources used for desk research
Report and white paper	
Across countries	Jensen, K. K., Sorensen, S. Y., Ryan, T. K., Lunkeit, A. B., Andersen, N. B., Edman, T., Ceccobello, C., Kostamo, M., & Fassbender, S. (2026). The Nordic Space Technology Ecosystem. Nordic Innovation. https://www.norden.org/en/publication/nordic-space-technology-ecosystem
Finland	Finnish Government (2025). Space Strategy 2030. https://julkaisut.valtioneuvosto.fi/items/69e41d91-4560-4778-bbb9-7a0be9660e55
Norway	Norwegian Space Agency (2020). The Government's strategy for Norwegian space activities. https://romdirektoratet.ams3.digitaloceanspaces.com/documents/Governments-strategy.pdf
Sweden	Swedish National Space Agency (n.d.). The Strategy of the Swedish National Space Agency. https://www.rymdstyrelsen.se/contentassets/3d8de30dbebb406c8f375c267ed04fe8/rymdstrategi-eng_web.pdf
Website and blog	
Across countries	https://spacenordic.com/ https://valtioneuvosto.fi/en/-/60305973/the-nordic-space-dialogue-will-be-strengthening https://www.esa.int/Applications/Observing_the_Earth/FutureEO/Space_for_our_climate/Space_for_the_Arctic https://commercialisation.esa.int/event/nordic-baltic-esa-bic-startup-event-2026/ https://www.norden.org/en/news/nordic-ministers-trade-and-industry-strengthen-co-operation-space-policy https://www.nordicinnovation.org/news/new-project-will-position-nordics-global-space-leader
Finland	https://spacefinland.fi/en/space-strategy https://spacefinland.fi/en/the-finnish-space-committee https://spacefinland.fi/en/act-and-decree-on-space-activities https://spacefinland.fi/-/vaihtoehtoja-suomen-avaruushallinnon-vahvistamiseksi https://tem.fi/en/space https://valtioneuvosto.fi/en/-/60305973/growth-outlook-for-space-enterprises-turnover-exports-and-employment-on-the-rise https://spaceworkshop.fi/ https://esabic.fi/ https://www.esaphilab.fi/
Norway	https://www.romsenter.no/ https://spacenorway.com/ https://www.jammertest.no/ https://www.esabic.no/ https://arcticphilab.no/ https://andoyaspace.no/
Sweden	https://www.government.se/government-agencies/swedish-national-space-board-rymdstyrelsen/ https://www.rymdstyrelsen.se/en/ https://en.rymdstyrelsen.se/teknikutveckling/esa/ https://spacesweden.se/ https://www.esa-bic.se/ https://esaphilab.se/ https://sscspace.com/esrange/ https://spaceswedennorth.com/