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Southeast Asian Space Activities: Recent Trends in Regional Cooperation

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SYNOPSIS

Southeast Asian space activities are steadily intensifying. One key vector is regional cooperation. Though not new, it has increasingly flourished in the last ten years, especially in three areas: satellite engineering, space policymaking, and space entrepreneurship. Combined, these trends may offer a breakthrough for advancing the Southeast Asian space industry as a whole.

COMMENTARY

Southeast Asia is a diverse patchwork of nations. This diversity is reflected in the region's space endeavours too. Indonesia's National Institute of Aeronautics and Space (LAPAN) is among the world's first space agencies. Conversely, Cambodia is only just beginning to develop domestic space activities.

Against this backdrop, regional cooperation, conducted in tandem with neighbouring space powers like China, India, and Japan, has emerged as a means of broadening access to the social and economic benefits of space. Though longstanding, such cooperation has intensified in recent years and appears important for growing a globally competitive regional space industry.

Three expanding cooperation domains, with the potential to offer a breakthrough in this regard, can be highlighted.

Cooperative Satellite Development: The Role of Universities

Historically, space sector cooperation in Southeast Asia has focused on science rather than engineering and on downstream applications like space-based data utilisation rather than upstream ones like space hardware development.

For instance, one of the earliest and most successful organisations promoting cooperation in the space field in the Asia-Pacific region is the Asian Association on Remote Sensing (AARS). The NGO was established in 1981 by Professor Shunji Murai of Japan, who is considered the father of remote sensing in Asia. It is dedicated to building regional capacity in Earth imagery analysis and applications.

In the last decade, however, regional space sector cooperation has expanded more and more upstream. Universities are playing an important role in lowering barriers in this respect. One institution stands out: the Kyushu Institute of Technology in Japan. It has trained dozens of students, including many from the Asia-Pacific region, in the entire lifecycle of small satellite development, operations, and disposal. Upon returning to their home countries, some students have set up their own second-generation satellite projects.

ASEANSAT is one example, conducted jointly between Malaysia, the Philippines, Thailand, and Japan. The project has even spilled over into private industry. Some of its members have joined Angkasa-X, a Malaysia-based startup aspiring to become the Space-X of the ASEAN region. This highlights the role of multi-nation university-led space engineering projects as a pivot for cultivating local and regional space industries.

Capacity Building in Space Policy: Old Institutions, New Initiatives

Space engineering is not the only domain that has witnessed closer regional cooperation in recent years. Another is space law and policy. New initiatives in this direction have been launched by three of the region's most comprehensive and oldest frameworks for space sector cooperation: the Asia-Pacific Regional Space Agency Forum (APRSAF), the Asia-Pacific Space Cooperation Organization (APSCO), and ASEAN's Sub-Committee on Space Technology and Applications (SCOSA).

Established in the 1990s-2000s, these organisations not only connect stakeholders within the region but also interface with and welcome participation by extra-regional entities.

In 2019, the APRSAF started the National Space Legislation Initiative (NSLI), followed in 2021 by the Space Policy and Law Working Group to share best practices in the field. In parallel, since 2023, APSCO has partnered with the United Nations Office for Outer Space Affairs (UNOOSA) in its Space Law for New Space Actors Project to build capacity in space governance among governmental authorities of emerging space nations.

A Technical Advisory Mission specifically for countries in the Asia-Pacific region was held in Tokyo in January this year. Finally, since its inception, the ASEAN SCOSA has held ad-hoc workshops covering the full range of space-related disciplines, including law and policy, such as at the ASEAN Space Workshop convened by Thailand in 2023.

These initiatives have all drawn broad participation from space practitioners from emerging space nations within and beyond the region. Indeed, there has been a growing appetite for institutionalising regional space activities.

Two testaments to this are the establishment of the Philippine Space Agency (PhilSA) in 2019 and the planned launch of a Thai National Space Agency in the near future, as discussed in the Space Industry Workshop at the APRSAF in Indonesia in September 2023. Currently, GISTDA, the Geo-Informatics and Space Technology Development Agency, is Thailand's de facto national space agency.

It is worth noting that there is currently no mechanism for space policymaking with complete coverage of Southeast Asia, encompassing the full range of space activities. Indeed, unlike Europe, which has a European Space Agency, there is no equivalent in the Asia-Pacific region, though discussions on the topic have been ongoing for several decades.

Based on the experiences of other regions that have recently established regional space agencies, like Africa, Latin America, and the Caribbean, they are not a panacea. Despite this, there may be room for deeper, strategic cooperation for regional-level space policymaking in Southeast Asia, too, in a way that maximises benefits attainable for the region's space industry.

Commercial Space: A Stronger Web of Regional Space Start-Ups

A growing share of the global space economy is being taken up by private companies, which is also true in Southeast Asia. The region's space industry has traditionally been dominated by large corporations. Examples include satellite operators like Indosat in Indonesia, Singtel in Singapore, MEASAT in Malaysia, and Mabuhay and PhilCOMSAT in the Philippines.

However, the mix of companies has significantly diversified in recent years, expanding towards small and medium-sized enterprises. Thailand's mu Space Corp, a start-up specialising in satellite platform manufacturing and satellite internet services, is one highly successful example.

Alongside companies, platforms are being established to foster cooperation among private space actors of all sizes, both old and new. A notable one is the SPACETIDE Foundation, based in Japan. The non-profit organisation hosts the annual SPACETIDE conference, one of the region's largest space industry events.

Such frameworks appear effective for cementing new partnerships, facilitating information exchanges, and connecting space businesses with traditionally non-space stakeholders in other industries and sectors. At the same time, the number of space start-ups in Southeast Asia remains small.

More comprehensive, continuous mechanisms for regional cooperation in space entrepreneurship may help unlock new possibilities for the regional space industry. Two recent, small-scale initiatives developed in this context are the Space Industry Federation for Asia (SIFA), led by the SPACETIDE Foundation in Japan, and the Association of Space Entrepreneurs in the Indo-Pacific (ASEIP), inaugurated at the Space Technology Conclave of IIT Madras in India in 2022. Their impact has yet to be determined, but they offer useful case studies on promoting space entrepreneurship in Southeast Asia across borders.

Conclusion

In recent years, we have seen growing regional cooperation in the Southeast Asian space sector, especially in satellite engineering via multi-nation university programmes, space policymaking via new initiatives by longstanding regional space organisations, and entrepreneurship via dedicated space business fora. If these trends are further combined and intensified, the region appears well-positioned to take a more prominent role in the global space arena.

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