

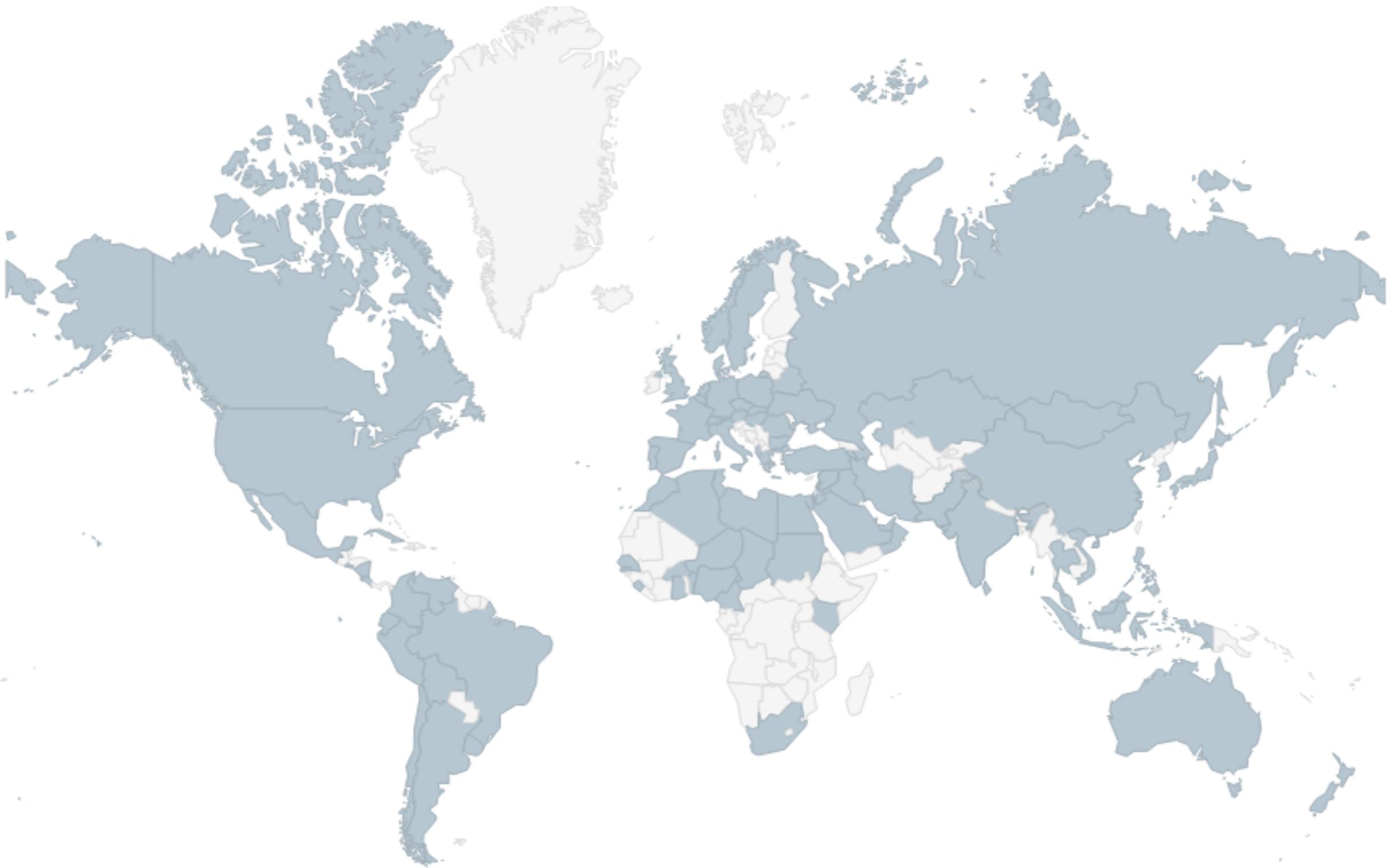
Space Security and Sustainability from the Perspective of an Emerging Space Nation



Dr. Rogel Mari Sese

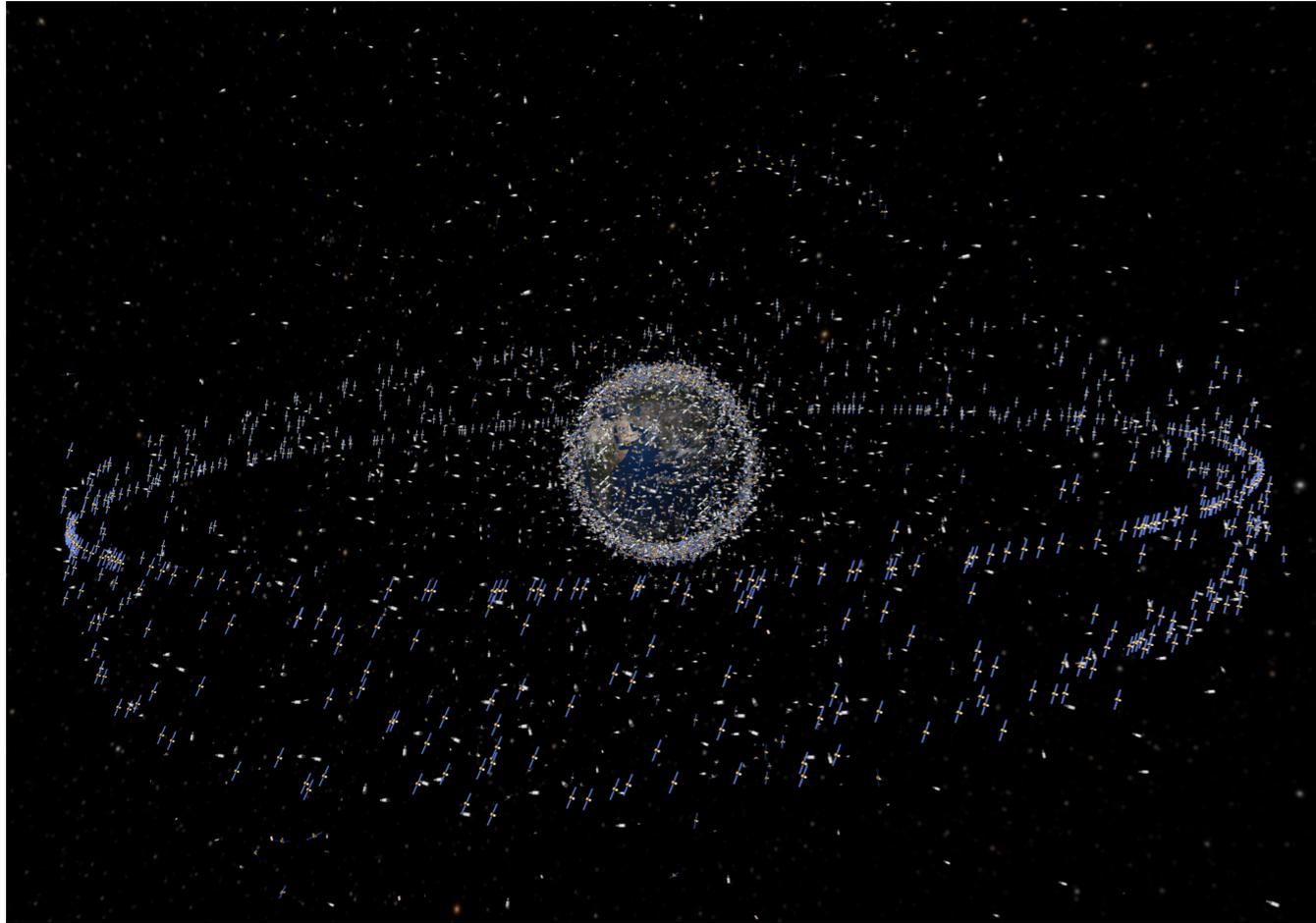
National SPACE Development Program, PHILIPPINES

UN COPUOS Member States



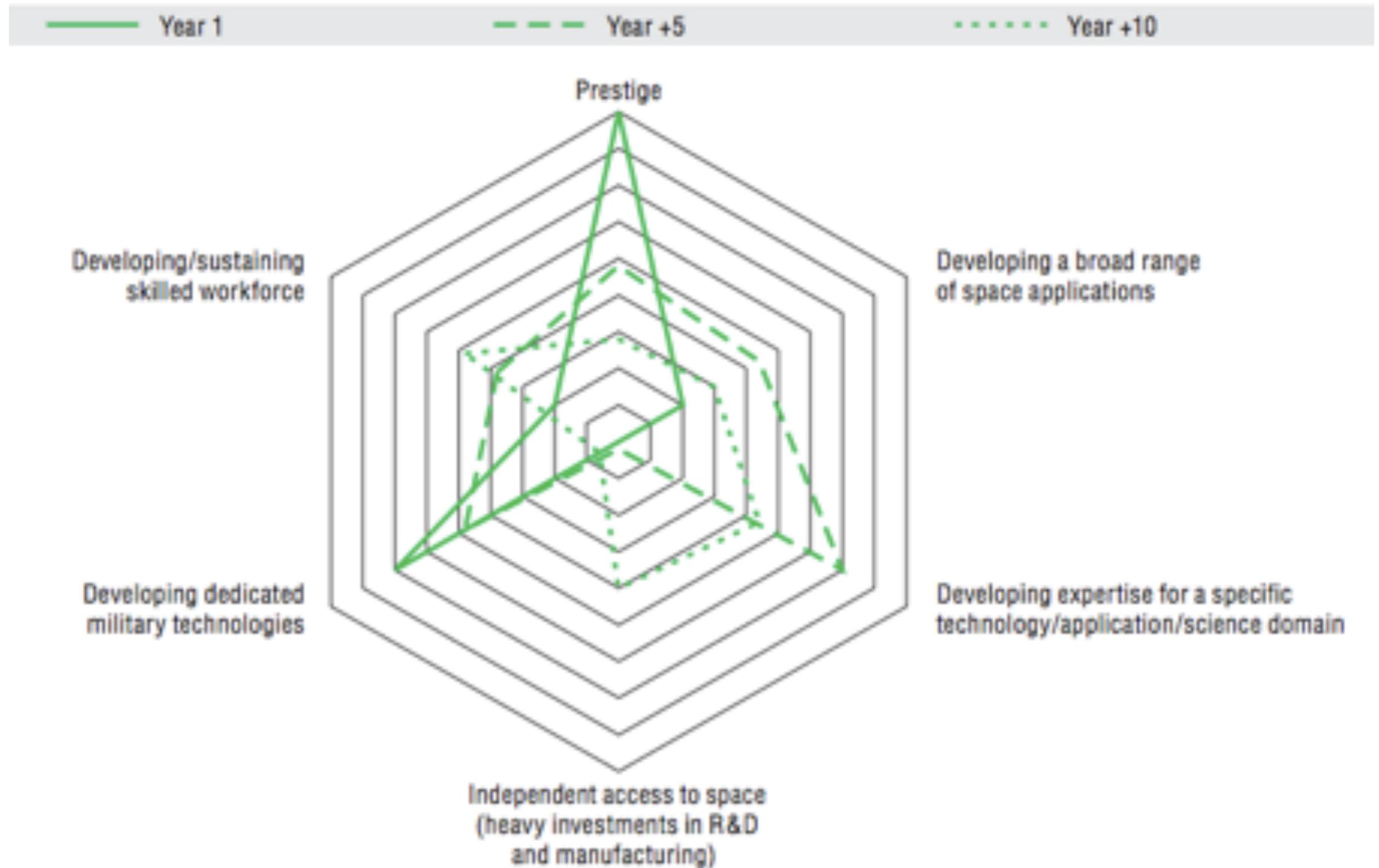
Current Challenges in Space Security

Space Debris



Weaponization of Space

Why Developing Countries Aim for Space?



Development Concerns of Emerging Space Nations

Lack of Resources and Technical Capability

Most emerging space nations starts as users of space data/services with minimal capability for satellite development and operations. University-based collaboration with established space nations is the common starting point for emerging space nations.

Low Priority and Lack of Awareness on SSA

Most emerging space nations aims to develop local capability for building small satellites. There is no immediate concern about space debris, weaponization of space and securing the space environment.

Space as a Luxury

Due to perception of space being a luxury, it is an uphill battle to start a space program in light of other socio-economic issues being faced by a nation.

Space as a Political Tool

Due to low funding amount, emerging space nations would want space projects to have a high-impact or high publicity value.

No Policy or Agency

Most emerging space nations have no space policy in the initial stages of the program since the concern is more on technology transfer and capacity-building.

Space Development Path of Emerging Space Nations



GO BIG OR GO SMALL

Emerging space nations either go for small satellites/cubesats/constellations for remote sensing or a geostationary telecommunications satellite.

GO LOCAL FOR DEVELOPMENT

Most emerging space nations aims to develop local capability for building small satellites.

GO FOREIGN FOR COLLABORATION

University-based collaboration with established space nations is the common starting point for emerging space nations.

GO LOW-COST BUT “HIGH IMPACT”

Due to low funding amount, emerging space nations would want space projects to have a high-impact or high publicity value.

The Philippines in a Nutshell...



of islands: 7,641

Population: 105 million (~75% of Russia)

Land Area: 300,000 km² (~2% of Russia)

Languages: Filipino, English

Major Religion: Christianity (90%)

Weather: Tropical Maritime Climate

GDP by PPP: \$873 billion (29th)

Located along the Pacific Ring of Fire

Average of 20 typhoons per year

#3 country most exposed to natural risks/hazards



Towards the Creation of a Philippine Space Agency

Baseline Research for Space Activities and Infrastructure (2013)

- Survey of infrastructure and human assets currently available in the country;

Crafting the National Space Development and Utilization Policy (2014)

- Analysis of foreign space programs and policies;
- multi-sectoral stakeholder consultation on the proposed space policy;

Development and DIWATA Microsatellites and National Ground Receiving Station (2014~)

- first technical cooperation with Japan for the development and launch of two (2) micro satellites;

National SPACE Development Program (2015~)

- develop a cost-benefit analysis and establish key space roadmaps and agenda
- foster international cooperation and partnerships

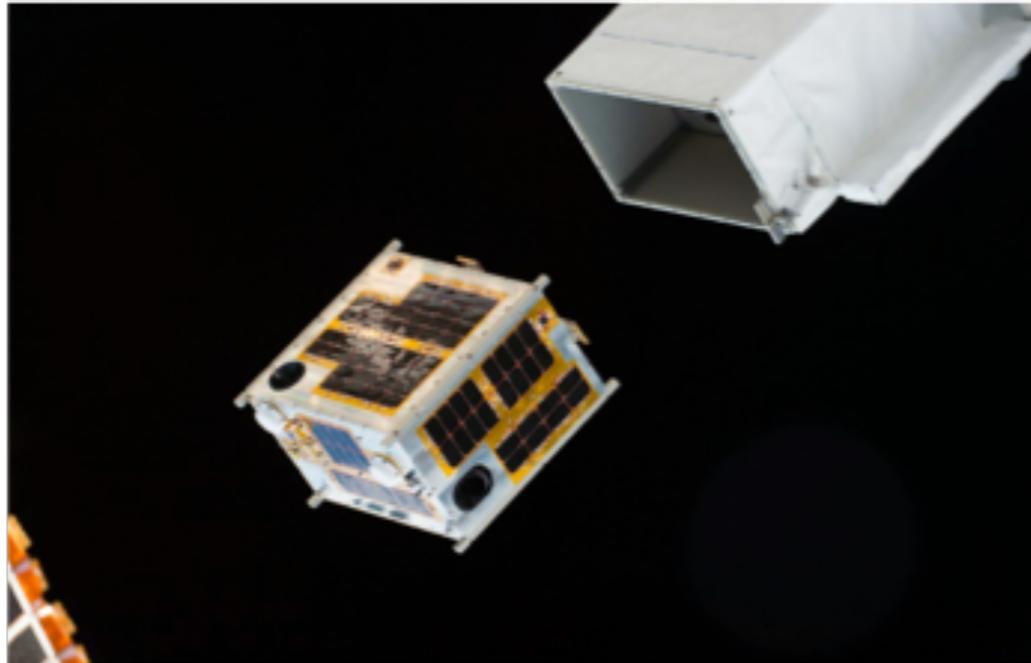
Legislation of the Philippine Space Agency and Policy (2016~)

- lobbying and proposing to politicians and decision-makers;

The Philippines as an Emerging Space Nation

Launch of DIWATA-1 Microsatellite

Diwata-1 release from ISS
Diwata-1 was successfully deployed into low-earth orbit from the Japanese Experiment Module 'Kibo', April 27, 2016



Legislation of Philippine Space Agency



23rd Asia Pacific Regional Space Agency Forum in Manila

Philippine Space Development and Utilization Policy

“Through international partnerships and collaborations, the Philippines will become a key player in the ASEAN and global space community by providing significant contributions and capabilities on space science and technology applications.”

Republic of the Philippines
HOUSE OF REPRESENTATIVES
Quezon City

SEVENTEENTH CONGRESS
First Regular Session

HOUSE BILL NO. 3637

AN ACT ESTABLISHING THE PHILIPPINE SPACE DEVELOPMENT AND UTILIZATION POLICY AND CREATING THE PHILIPPINE SPACE AGENCY (PSA) AND DEFINE THE PURPOSE AND SCOPE OF ITS ACTIVITIES.

Introduced by Hon. Erico Aristotle C. Aumentado and
Hon. Seth Frederick P. Jalosjos

SEVENTEENTH CONGRESS OF THE REPUBLIC OF THE PHILIPPINES
First Regular Session

SENATE
S.B. No. 1211

Introduced by: Senator Paolo Benigno "Bam" A. Aquino IV

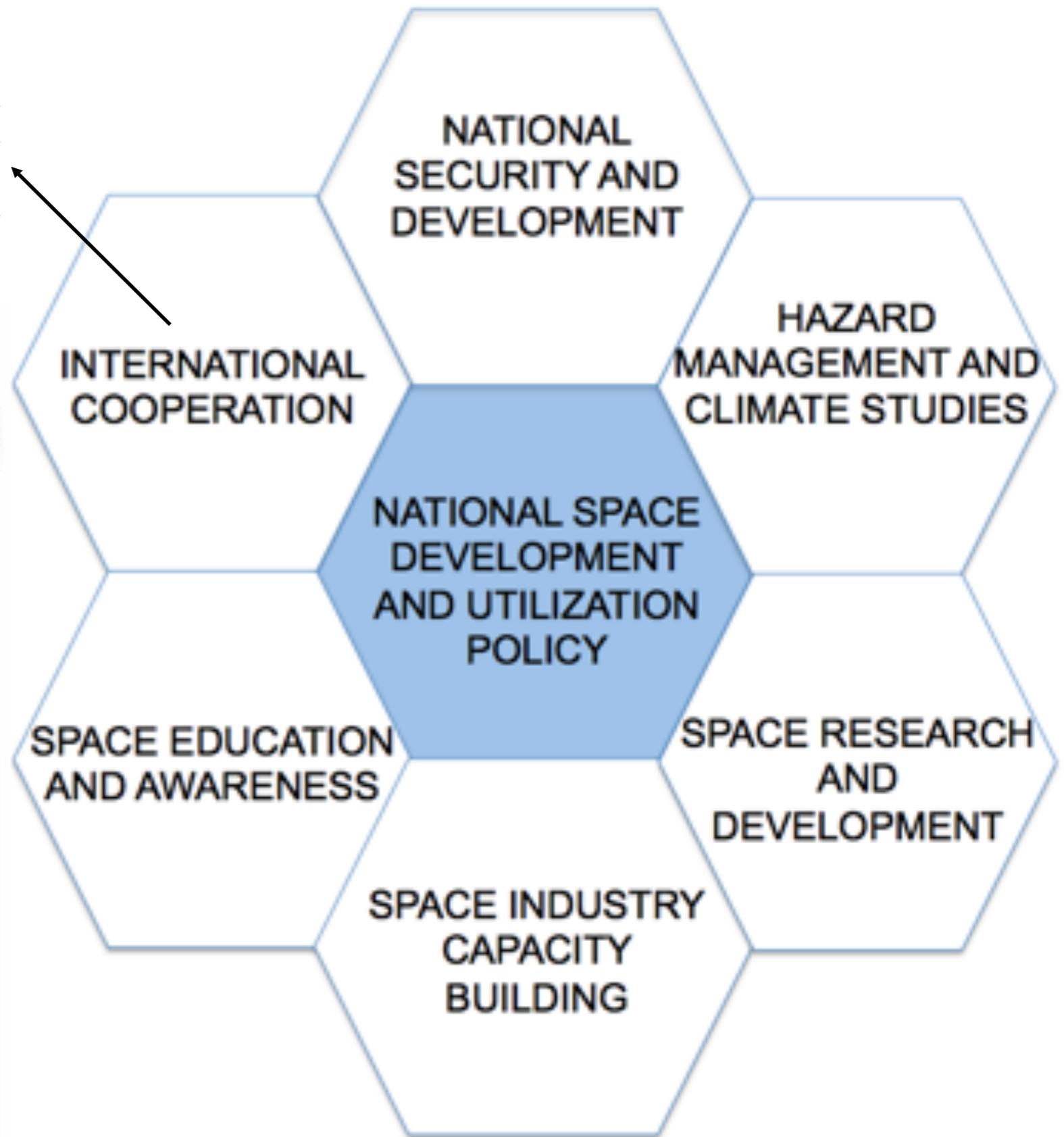
AN ACT
ESTABLISHING THE PHILIPPINE SPACE DEVELOPMENT AND UTILIZATION POLICY AND CREATING THE PHILIPPINE SPACE AGENCY, AND FOR OTHER PURPOSES

EXPLANATORY NOTE

Rocket ships, astronauts, and scenes from outer space are what often come to mind at the mention of Space Science, but there are much more practical technological applications to this discipline that can benefit countries like the Philippines.

In fact, both developed and developing countries alike, including our ASEAN neighbors, have respective aeronautics and space agencies to build their own spaceships and join the ranks of space-faring nations.

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The Role of Emerging Space Nations

ESTABLISH A STRONG SPACE POLICY

Commitment to space security and sustainability, specifically the mitigation of space debris and non-weaponization of space, should be in place even at the early stages of development.

RATIFY INTERNATIONAL SPACE TREATIES

The Outer Space Treaty, Liability Convention and Registration Convention should be signed/ratified by emerging space nations.

COOPERATE WITH RESPONSIBLE SPACE PLAYERS

Emerging space nations should carefully select the nation partners appropriate to their national goals and capabilities.

EXPLORE NORTH-SOUTH AND SOUTH-SOUTH COOPERATION

Partnerships should not only be with established space nations but also with other emerging space nations.

BE MORE ACTIVE IN THE INTERNATIONAL ARENA

Emerging space nations should be more active in participating in discussions on space security and sustainability

The Role of Established Space Nations

SERVE AS A ROLE MODEL

Space-faring nations should set an example in promoting space security and take the lead in creating confidence-building measures but should also take into account inputs from emerging space nations.

SHARE BEST PRACTICES

Having undergone the era of space development at an earlier time, sharing best practices can significantly assist emerging space nations become responsible.

COOPERATE WITH RESPONSIBLE EMERGING SPACE NATIONS

Select capable and responsible nation partners that are committed to promoting space security and sustainability.

ENCOURAGE DEVELOPMENT AND INNOVATION

Space-faring nations should encourage technology transfer but should not stifle the growth and development of emerging space nations by imposing restrictions that can hinder development.

Moving Towards Better Space Security

UNISPACE +50

