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Indonesia Space Act (ISA)

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Outline

-  I Background and Legal Basis
-  II Contents of Indonesia Space Act (ISA)
-  III Remote Sensing Regulations under ISA
-  IV The Implications in Promoting Space-based Technology Applications to Climate Change
-  V Concluding Remarks

I. Background and Legal Basis

- Why Indonesia needs a Space Act?
- What legal aspects necessary?
- What the ultimate goals and objectives?
- How the implementation and follow up?

Scope of Space Activities

SPACE SYSTEM comprises of: (*)

Services:

1. Meteorology, navigation, communication, remote sensing, space exploration, commercial
2. Military space activities: command, control, communication, computer, intelligence, surveillance, reconnaissance (C4ISR)

Infrastructure:

1. **Satellite Orbits:** LEO (<2000km), MEO (up to 20.000km), GSO (36.000km, permanent).
2. **Ground stations:**
 - a. TT&C (fixed, transportable, mobile)
 - b. TT&C for up-link and down-link (HP, GPS Receivers)
 - c. Antenna, radio frequency utilization.
3. **Launching vehicles:**
Rocket, spaceports, safety & security



(AP Photo/NASA)

(*) James C. Moltz (CNS Study, 2003, occasional paper 12)

(2) Remote Sensing



(1) Technology

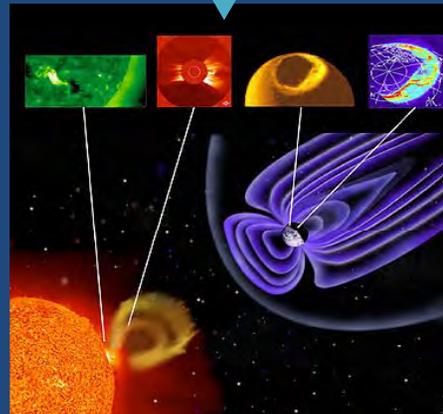
Space Activities



(3) Telecommunication



(6) Navigation



(5) Science, space exploration



(4) Industry and Services

Space Activities Risks

1. Launching Risks

- Launching failure
- Environmental pollution
- Nuclear Power Source use risks
- Effects of space operations

2. Collisions

- Collision with aircrafts
- Collision with space objects
- Collision with space debris

3. International Conflicts

- Utilization of orbit slot and frequency
- Launching and space operation failures
- Disaster due to space debris



International Treaties on Space Activities

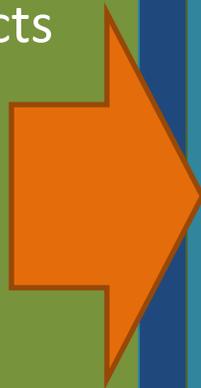
Five international treaties have been negotiated and drafted in the UNCOPUOS:

1. The 1967 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (the "**Outer Space Treaty**").
 2. The 1968 Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space (the "**Rescue Agreement**").
 3. The 1972 Convention on International Liability for Damage Caused by Space Objects (the "**Liability Convention**").
 4. The 1975 Convention on Registration of Objects Launched into Outer Space (the "**Registration Convention**").
 5. The 1979 Agreement Governing the Activities of States on the Moon and Other Celestial Bodies (the "**Moon Treaty**").
- The outer space treaty is the most widely-adopted treaty, with 100 parties.
 - Indonesia ratified and has become the party of the first four treaties.
 - UNCOPUOS discussions & recommendation on national legislations.

International and National Space Law Regimes

International space law regimes:

- Peaceful uses of outer space: remote sensing, space observation, telecommunication, navigation, etc
- Utilization of space objects and space environment
- Rocket launching
- Satellite orbiting
- NPS utilization
- Astronaut rescue
- Space debris management
- Space object registration
- Liability



National space law regimes:

- Peaceful uses of outer space: remote sensing, space observation, **telecommunication, navigation, commercial, etc.**
- Utilization of space objects and space environment
- Rocket launching
- Satellite orbiting
- **NPS utilization**
- Astronaut rescue
- Space debris management
- Space object registration
- Liability
- Institutional mechanisms, strategic plan, R & D, commercial, standards, cooperation, funding, etc.

(*) Regulated in other Acts

The Needs: Robust National Legal Framework

- To protect national interests and concerns in space activities for the benefit of community prosperity, but in compliance with related international laws;
- To strengthen the institutional capacity;
- To establish legal basis for the implementation of international treaties and conventions ratified by Indonesia;
- To optimized the utilization and efforts of national resources for space activities.
- To be in line with UNCOPUOS recommendation on national space legislations.

Objectives of Regulations under ISA

1. To create self-sufficiency and promote nation competitiveness;
2. To optimize space activities;
3. To ensure the sustainability of space activities;
4. To provide robust legal basis;
5. To achieve safety and security in space activities;
6. To protect nation and civilians from negative impacts of space activities;
7. To optimize the implementation of space international treaties and conventions ratified by Indonesia;

Status and Follow Up

- ISA was approved by the Parliament on 9 July 2013.
- ISA was signed by the President on August 2013 and documented as Space Act of the Republic of Indonesia No. 21 / 2013.
- A number of Government Regulation(s), Presidential Decree(s), Ministerial Decree(s), and Agency Decree(s) should be accomplished in one to two years from 2013 as the implementation regulatory mandated by ISA.

II. Main Content of ISA

Consists of 105 articles.

1. General Provisions
2. Space Activities: Space Science, Remote Sensing, Space Technology & Spin-off, Launching, Commercial.
3. Institutional Mechanisms, Strategic Plan.
4. Safety and Security.
5. Spaceport Operation.
6. Management of Falling Space Objects and Astronauts Safe and Rescue.
7. Space Object Registration.
8. International Cooperation.
9. Liability.
10. Insurance, Guarantee, and Fiscal Facility.
11. Environment Conservation.

III. Remote Sensing Regulations under ISA

- Article 15 ∞ Article 22
- Data collection: satellite & ground station operation, available satellite imageries;
- Data processing;
- Data archive and distribution;
- Data utilization and information dissemination.
- Ground Stations could only be operated by LAPAN.
- Collection and distribution of high-resolution satellite data for government agencies are conducted by LAPAN.

III. Remote Sensing Regulations under ISA

- Climate change studies mostly need global, regional, and long term data, since the use of low and middle resolution data will be low cost as it is non-commercialized;
- Detailed studies and mapping more costly since high resolution data is commercialized.
- Standardized methods of data processing including data correction, parameter detection, and classification.
- National & international cooperation in data collection and applications.



III. Remote Sensing Regulations under ISA

- Data and metadata archiving and distribution through National Remote Sensing Data Bank, mandated to LAPAN, also as a node of National Geospatial Data Network.
- Provisions of low cloud cover data, supervision, recommendation of national needs, facilities for data processing (at LAPAN).



More reliable, available, & accessible satellite data for users.

IV. Implications to the Applications of Space-based Data on Climate Change

- To address climate change issues (mitigation, adaptation, disaster risk reduction, loss and damage assessment), we need a long record, high quality, and reliable data → ISA enables integrated data collection, archiving, and distribution among stakeholders and users more efficiently.
- Challenges for research & development to produce high quality data and information based on standardized methods to measure, report, and verify (MRV) GHG emission.
- To promote stronger linkages with regional and international entities related to remote sensing and/or climate, such as GEO GEOSS, IGBP, APRSAF, ASEAN COST, etc.

V. Concluding Remarks

ISA is necessary to:

1. To regulate space activities within and/or by Indonesia.
2. To avoid the loss and damage and accident due to space activities conducted by government, international organization, private, and non-governmental entities on behalf of the Indonesian Government.
3. To promote enhanced capacity in space science and technology and their applications more systematically.
4. To clarify the position of regulators, operators, and relevant stakeholders in space activities and all legal aspects of the implementation.
5. To promote the effective use of space-based data applications on various environmental problems, including climate change, through international, regional, and national collaborations.

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