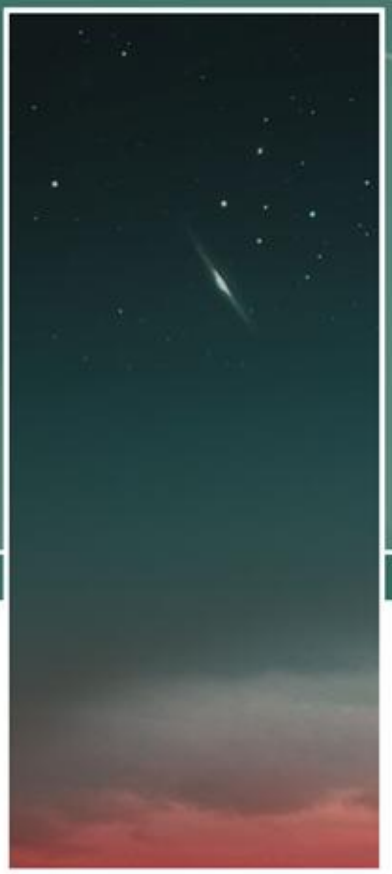

# Space Debris Mitigation

## Policies, Law and Standards Development in China

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# Outline of Presentation

- Overview
- Administrative Authorities
- Practices
  - Policies
  - Legislation
  - Standards
- Problems
- Future Works-doing & to be done
- Conclusion

# Overview

- Joined in IADC in 1995
- Initiated the First Space Debris Research Plan in 2000
- Set up Space Debris Research Management Office
- Signed the UN COPUOS Guidelines on Space Debris Mitigation in 2007

# Administrative Authorities

- Commission of Science, Technology, and Industry for National Defense (COSTIND)
- Administration of Science, Technology, and Industry for National Defense (AOSTIND-MIIT)
- China National Space Administration (CNSA)

# Practices -Policies

- **White Paper 2000**
  - to take necessary measures to protect environment and resources of outer space
  - to probe into the measures to mitigate space debris and to promote international cooperation on this issue

# Practices -Policies

- **The Space Debris Action Plan 2001**
  - to improve capabilities of surveillance
  - to get breakthrough on passivation technology
  - to establish dynamic database
  - to fulfil the research on risk assessment, prediction and collision avoidance
  - to draw up de-orbit post mission disposal for GEO and LEO satellites

# Practices -Policies

- **White Paper 2006**
  - participated in activities organized by IADC, started the Space Debris Action Plan
  - to strengthen legislation work, to formulate laws, regulations and space industrial policies for guiding and regulating space activities

# Practices -Policies

- **The 11th Five-Year Program for Space Development 2007**
  - to implement Space Debris Prediction Project
  - to conduct research on prediction, collision avoidance and mitigation
  - to develop shielding and survivability measures for space craft

# Practices -Policies

- **The Development Guideline of Space Debris Action Plan 2006-2020**
  - Space debris surveillance and prediction program
  - Shielding and survivability program
  - Space environment protection program
    - to draft and implement Standards of Space Debris Mitigation

# Practices -Legislation

- **Measures for Registration of Space Objects 2001 (Registration Regulation)**
- **Interim Measures for Licensing the Project of Launching Civil Space Objects 2002 (Licensing Regulation)**
  - Govern the space launch activities for civil purposes
  - Require the licensees to provide report on how to avoid environmental pollution and space debris problem

# Practices –Standards

- **Requirements for Space Debris Mitigation (QJ3221-2005)**
  - Issued by COSTIND on April 11, 2005 and entered into force on July 1st, 2005.
  - Industrial standards

# Practices –Standards

1. Scope
2. Terms and definitions
3. Management requirements
4. Mission planning requirements
5. Design requirements
6. Operational requirements
7. Post mission disposal requirements

# Practices –Standards

- **Application**
  - Applicable to mission planning, design, launch, operation and post mission disposal of spacecraft and launch vehicles that will be injected in Earth orbit.

# Practices –Standards

- **Mitigation Measures**
  - Limit debris released during normal operations
  - Minimise the potential for on-orbit break-ups
  - Prevention of on-orbit collisions
  - Post mission disposal

# Problems

- Space Policies-Space Law-Standards
- National Mechanisms
  - Absence of harmonized space law and regulations
  - Absence of internal coordination between different departments
- Balance Different Interests
- Public Awareness

# Future Works-doing & to be done

- **Legal Research Projects**
  - Legislation on space debris and space environment protection
  - Policies of space debris mitigation
- **Jurisprudential Problems**
  - Legal definition of space debris
  - Liabilities
  - Establishment of national mechanisms
  - National legislative procedures of limiting space debris

# Future Works-dong & to be done

- UN COPUOS Space Debris Mitigation Guidelines (A/62/20)
- IADC Space Debris Mitigation Guidelines (Revision 1)
- NASA Procedural Requirements for Limiting Orbital Debris (NPR8715.6)
- Process for Limiting Orbital Debris (NASA-STD-8719.14)
- European Space Debris Safety and Mitigation Standard
- ESA Space Debris Mitigation for Agency Projects (ESA/ADMIN/IPOL)
- Russian Aviation & Space Agency Standard: General Requirements, Mitigation of Space Debris Population

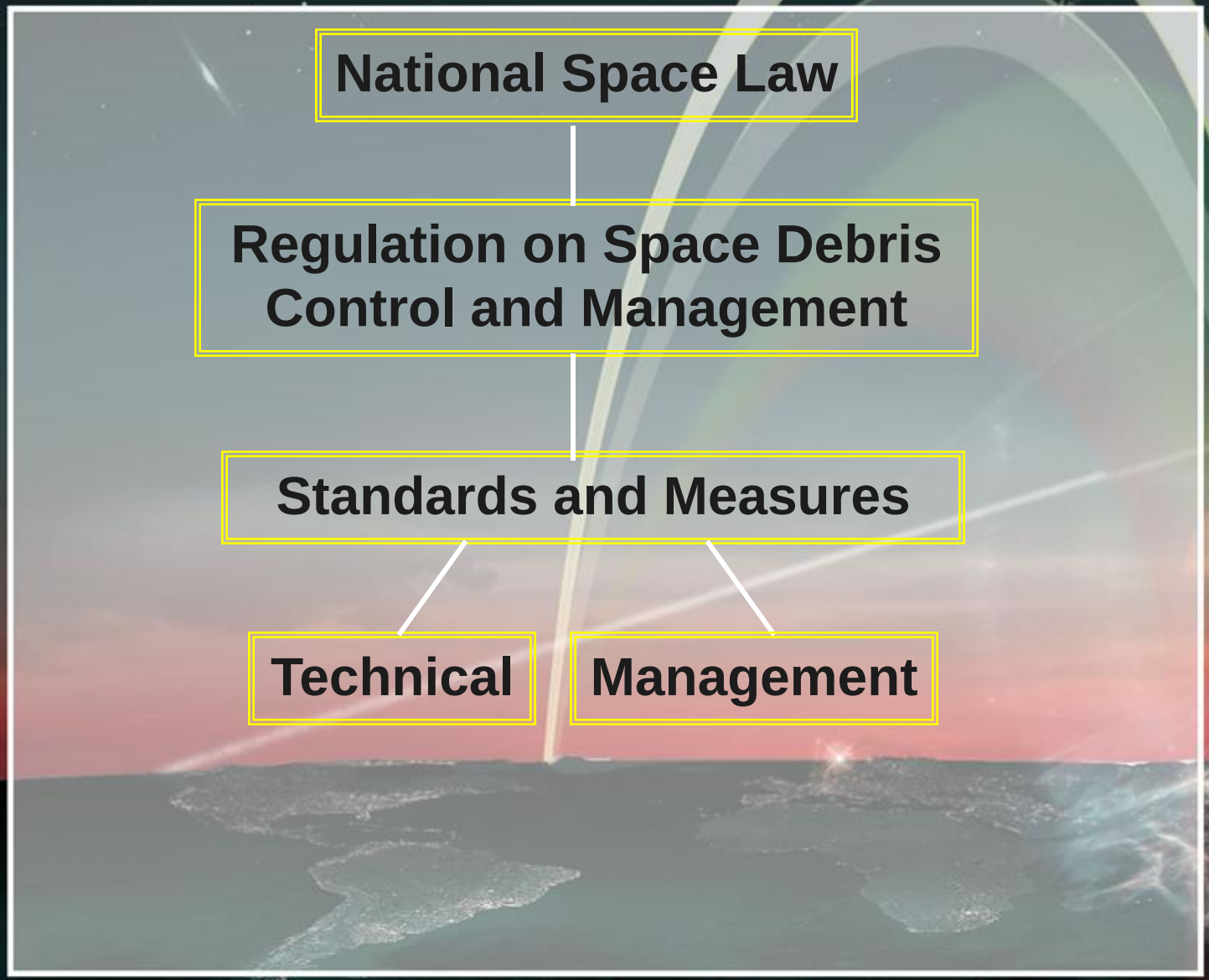
# Future Works-doing & to be done

- **Drafting the Regulation on Limitation and Management of Space Debris**
  - Purpose
    - to protect the space environment, to effectively control the generation of space debris, to prevent the damage caused by debris to space activities and to fulfil the obligations under the space conventions to which China is a Contracting Party

# Future Works-doing & to be done

- **Drafting Regulation on Space Debris Control and Management**
  - Main contents
    - National Mechanisms
      - ❑**Coordination**
      - ❑**Surveillance and prediction**
      - ❑**Emergency management**
    - General requirements
    - Responsibilities of contractor and operator
    - Liabilities

# Legal Framework of Space Debris Mitigation



# Thank you!

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