



وكالة الإمارات للفضاء
UAE SPACE AGENCY

Accident and Incident Investigation Regulation

3rd ICAO and UNOOSA Aerospace Symposium (SPACE 2017)

August, 29th 2017



Federal Decree Law No.1 of 2014 establishes the UAE Space Agency

UAE Space Agency Objectives as Defined by the Decree*

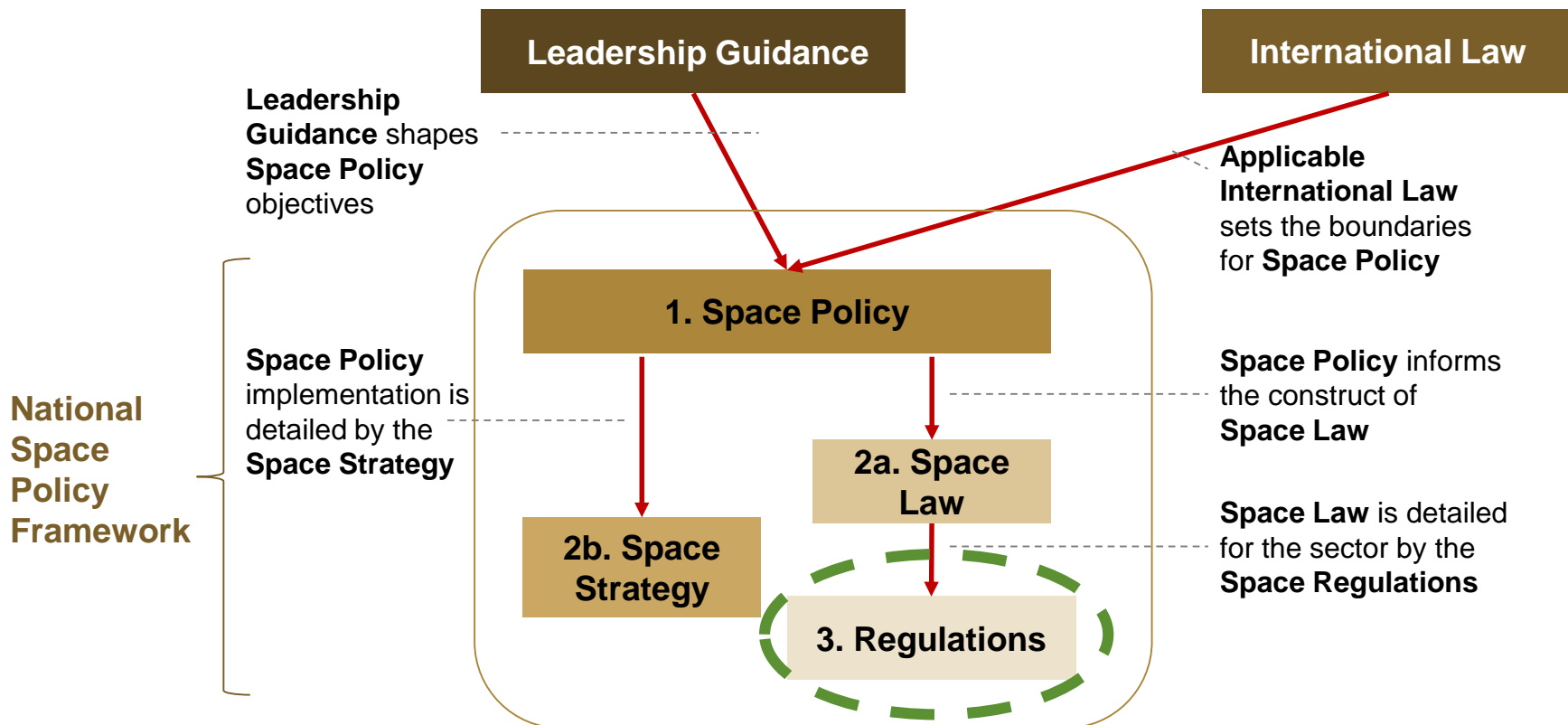
Federal Decree Law No.1 of 2014



Agency Objectives*

- 1 **Organize, support and guide the Space sector to serve the interests of the State**
- 2 **Encourage the development and use of Space science and technology** within the State and provide advice in this area
- 3 **Establish international partnerships** in the Space sector so as to enhance the State's role and status in the Space sector
- 4 **Contribute to the diversification of the national economy** through a developed national Space sector
- 5 **Raise awareness** of the importance of the **Space sector** and the development of the **qualified human resources** in the Space field

Development of UAE Space Policy and Regulatory Framework





Policy Ultimate Goal (*Issued in September 2016*)

... to build a strong and sustainable space sector that:

- *supports and protects national interests and vital industries;*
- *contributes to the diversification and growth of the economy;*
- *boosts specialized competencies;*
- *develops scientific and technological capabilities;*
- *engrains the culture of innovation and national pride, and*
- *strengthens role regionally and globally.*



Law Ultimate Goal (*...under development*)

... to create attractive and responsive regulatory environment for space sector that:

- In harmony with national legislation system and augment as necessary*
- Adequately balances between the safety& security& environment requirements and the economic & commercial & innovation requirements;*
- Respect international law;*

Draft Space Law Structure (under development...)

- The Preamble
- **Article 1 – Definitions**
- Article 2 – Scope of Application
- Article 3 – Competences of the Agency
- **Article 4 – Authorization of Space Activities**
- **Article 5 – Liability**
- **Article 6 – Space debris mitigation**
- **Article 7 – National registry of Space objects and international registration**
- **Article 8 – Manned Spaceflight**
- Article 9 – Remote sensing data management
- **Article 10 – Investigation of space-related accidents and incidents**
- Article 11 – Exploration and Utilization of Space Resources
- **Article 12 – Collaboration with Governmental entities**
- Article 13 – Fees
- Article 14 – Fines and Sanctions
- Article 15 – Transitional provisions
- Article 16 – Final provisions

- ❖ **The Regulations complements the Space Activities Law and detailing different space regulatory aspects**
- ❖ **Five Capstone Regulations were identified to start regulating Space Activities:**

i. Space Object Registration

- Set out the legislations and procedures to register a UAE Space Object in the National Registry and the UN International Registry

ii. Accident and Incident Investigation

- Set out the legislations and procedures in case of occurrence of Space related Accidents and Incidents in which the UAE is an incitant or affected 3rd party

iii. Authorization of Space Activities

- Set out the different types of Authorizations, terms and conditions and procedure to obtain a Space Activity Authorization

iv. Manned Space Flights

- Set out terms, conditions and procedures required to commence orbital and sub-orbital Space Flights with human on board

v. Auditing Framework

- Set out the legislations and procedures of Auditing operators on compliance to terms, conditions and regulations issued by the UAE-SA

Definitions (*draft*)

13. Incident

an event resulting from Space activities or Space-support flight or High-altitude activities, that affects, could affect or could have affected the safety of such activities or of the operation of a Space object or an airplane used in Space-support flight or High-altitude activities, without qualifying as an Accident, or that involves circumstances indicating that an Accident nearly occurred, as further specified by the Regulatory Framework;

14. Accident

any event resulting from Space activities or Space-support flight or High-altitude activities in which a person dies or suffers serious injury, or in which a Space object or an airplane used in Space-support flight or High-altitude activities is destroyed or seriously damaged or causes serious damage to property, as further specified by the Regulatory Framework;

Regulation on Accident Investigation covers initiation, conduct and presentation of findings of accident investigations

Regulation on Accident Investigation: Issues

- 1 Objective and scope of the Regulation**
 - What are the objectives of the Regulation on Investigation?
 - When shall the Regulation on Investigation be applied?
- 2 Formation of an Investigation Committee**
 - Which authority will oversee the investigations (i.e, Investigation Committee)?
 - How will this authority be created?
 - What powers will this authority enjoy?
- 3 Initiation of the accident investigation**
 - Who shall be responsible for initiating an accident investigation?
 - In which instances shall an accident investigation be initiated?
 - How shall communication with media and general public be handled?
- 4 Appointment of the lead investigator and the team**
 - How shall the Lead Investigator be appointed and what powers shall he enjoy?
 - How shall the rest of the Investigation Team be appointed?
- 5 Investigation involving foreign countries**
 - How shall the accident investigation process and procedures accommodate legitimate interests of foreign countries that have been involved in the accident?
- 6 Reporting**
 - What shall be the reporting requirement associated with accident investigation findings?



An inter-agency Investigation Committee will appoint an independent Lead Investigator and Team to assure objectivity of the investigation

Regulation on Accident Investigation: Outline (1/2)

draft

1

Objective and scope of the Regulation

- Objective: to determine causes of an accident and not to apportion blame or liability
- Scope: accidents involving UAE territory/facilities, objects, and/or Operators that (should) have been granted a proper Authorization by the Space Agency

2

Formation of an Investigation Committee

- To establish a permanent inter-agency Investigation Committee (IC), formed from the Space Agency, GCAA, TRA and other authorities deemed relevant by the Government
- The IC meet regularly once a year; to discuss any updates on its processes, members, and also look at any recent int' major space incidents and accidents
- In addition to the regular yearly meeting, the IC meets pursuant to a relevant space accident occurring

3

Initiation of the accident investigation

- Any applicable investigation will be initiated by the Space Agency
- Agency will inform the Investigation Committee of the accident or incident occurrence, main aspects of the accident and the measures to be taken
- Agency should advise the Investigation Committee on a particular strategy regarding the information of media and the public at large



An inter-agency Investigation Committee will appoint an independent Lead Investigator and Team to assure objectivity of the investigation

Regulation on Accident Investigation: Outline (2/2)

draft

4

Appointment of the lead investigator and the team

- Agency to develop & maintain shortlist of candidates for role of Lead Investigator (LI)
- Agency suggests to the IC a person from shortlist to be appointed as a LI
- LI proposes to the Investigation Committee qualified personnel to be appointed to the team. This may include personnel of the Agency
- LI and the investigation team enjoy broad investigative powers specified in the Reg.

5

Investigation involving foreign countries

- If foreign governments, operators or space objects are involved in the accident, the LI shall ensure cooperation with any official foreign accident investigation team
- Foreign state with a special interest in an accident, shall upon request, be permitted by LI to appoint its own experts to the team, who will enjoin limited investigation rights

6

Reporting

- LI shall at least every three months present a written Interim Report to the Investigation Committee on the progress of the accident investigation and major obstacles
- Final Report to be presented to the Investigation Committee once final conclusions can be drawn re: i) cause of accident, ii) consequences & any damage that may have resulted, and iii) possible safety recommendations to prevent occurrence in the future



Key Conclusions and Recommendation

1. We are expecting:
 - a) exponential growth in number of launches in the upcoming years
 - b) 1000% increase in number of satellites in Near Earth Orbits in the upcoming 7 years
 - c) Start of sub-orbital flights (Manned and Un-Manned)
 - d) More number of re-entries (including using of landing sites)
 - e) Increasing cyber threats
2. There is clear international gap in having international mechanism for space accident investigation
3. Civil Aviation Sector is far more mature in terms of Accident and Incident Investigations
4. While there are obvious differences; there are a lot of commonalities in terms of process of Accident Investigation between Space and Aviation
5. There are areas for common interest for both sectors (e.g. space accident the involves aircraft or air/spaceport)



- ✓ Need for International mechanism for Space Accident and Incident Investigation.
- ✓ Such Mechanism should build on long experience by Aviation Sector, while considering the differences.
- ✓ Such Mechanism should also cater for areas of common interest by Space and Aviation.