

CANADA

National mechanisms:

1. Canadian Remote Sensing Space Systems Regulations – 2007

Legal Framework:

- *Canadian Remote Sensing Space Systems Act, 2005 (amended 2007)*
2. Canadian Space Agency adoption of the IADC Space Debris Mitigation Guidelines – 2012
 3. Canadian Client Procedures Circular (CPC) for Licensing of Space Stations – 2014

1. Canadian Remote Sensing Space Systems Regulations

Description:

The Canadian Remote Sensing Space Systems Act is a national law adopted by Parliament. The Canadian Remote Sensing Space Systems Regulations are made by the Governor-in-Council upon the recommendation of the Minister of Department of Foreign Affairs, Trade and Development.

A remote sensing satellite disposal plan must be provided in order to obtain a Remote Sensing Satellite License in Canada. Under the Canadian Remote Sensing Space Systems Act, no person in Canada shall operate a remote sensing space system in any manner, directly or indirectly, except under the authority of a License. The Act mentions that a License may not be issued without a “system disposal plan” that, among other things, provides for the protection of the environment, public health, and the safety of persons and property. The Acts also sets out licensees’ requirements and obligations in regard to the disposal plan.

The Canadian Remote Sensing Space Systems Regulations provides information on the implementation of the Act. Under the section *Remote Sensing Satellite Disposal* in Schedule 1, the Regulations set out the requirements to be identified in the Disposal Plan, including the space debris mitigation standards. Those requirements are:

- a) method of disposal that is proposed for each satellite and the reliability of that method;
- b) estimated duration of the satellite disposal operation;
- c) probability of loss of human life and how it was calculated;
- d) amount of debris expected to reach the surface of the Earth, the size of the impact area expressed in square metres, and how they were calculated;
- e) confidence level of the determination of the boundaries and how the boundaries and confidence level were calculated;

- f) identity and quantity of hazardous material and dangerous goods contained in each satellite at the end of its mission life, the quantity expected to reach the surface of the Earth on re-entry and how the quantities were calculated;
- g) orbital elements and epochs of the proposed disposal orbits for each satellite;
- h) an assessment of space debris expected to be released from each satellite during normal operations by explosions, by intentional break-ups and by on-orbit collisions, and the measures proposed to mitigate the production of space debris.

Applicability:

The Act and its regulations are mandatory in Canada, and also apply to the following persons with respect to their activities outside Canada:

- (A) Canadian citizens;
- (B) permanent residents;
- (C) corporations that are incorporated or continued under the laws of Canada or a province;
- (D) members of any prescribed class of persons having a substantial connection to Canada related to remote sensing space systems.

2. Canadian Space Agency adoption of the IADC Space Debris Mitigation Guidelines

Description:

The Canadian Space Agency (CSA) adopted the Inter-Agency Space Debris Coordination Committee (IADC) Space Debris Mitigation Guidelines in 2012 to mitigate the potential creation of space debris generated from its projects, missions and activities. It is intended to apply the IADC guidelines in the planning, design, construction, operation and end of life of CSA projects, missions and activities for which a Space Debris Mitigation Plan will be established as required in the guidelines.

Applicability:

The IADC Space Debris Mitigation Guidelines will apply to all CSA projects, missions and activities.

3. Canadian Client Procedures Circular (CPC) for Licensing of Space Stations

Description:

Industry Canada, a Department of the Government of Canada, implemented a licensing regime for space stations (satellites) in 2014. The document *Client Procedures Circular (CPC) 2-6-02 – Licensing of Space Stations* sets out general licensing procedures for all Canadian space stations (satellites), including application requirements and post-authorization procedures related to licenses that use radio spectrum.

Section 3.3.3 Space Debris Mitigation Plan of CPC-2-6-02 requires that applicants for space station spectrum and radio licences submit a Space Debris Mitigation Plan as part of their applications.

Industry Canada distinguishes between geostationary satellites and non-geostationary satellites. The following is an excerpt from section 3.3.3 of the CPC 2-6-02 describing the policy requirement:

- For geostationary satellites, the applicant must submit a plan for de-orbiting their satellite(s) in compliance with Recommendation ITU–R S.1003-2, *Environmental Protection of the Geostationary Satellite Orbit*.
- For non-geostationary satellites, the applicant must submit a plan for de-orbiting their satellite(s) in accordance with best industry practices.

Applicability:

Use of radio frequencies in Canada requires the regulatory approval that is provided through a Radio Licence issued by Industry Canada. The space debris mitigation requirement is applicable to all space stations (satellites) licensed in Canada. The licensee must agree to comply with all the conditions of licence prior to being granted the licence.

Relation to international mechanisms:

Canada contributed to and supported the development of the Space Debris Mitigation Guidelines of the Committee.

The space debris mitigation requirements of the Canadian Remote Sensing Space Systems Regulations are consistent with the Space Debris Mitigation Guidelines of the Committee and the IADC Space Debris Mitigation Guidelines.

The IADC Space Debris Mitigation Guidelines adopted by the CSA are consistent with the Space Debris Mitigation Guidelines of the Committee. They are also in compliance with the ISO 24113: Space Systems – Space Debris Mitigation Requirements, and the ITU recommendations ITU-R S.1003.

The Canadian Client Procedures Circular (CPC) for Licensing of Space Stations is in compliance with the ITU Recommendation ITU-R S.1003 and the Space Debris Mitigation Guidelines of the Committee.

Link to other national mechanisms:

None.

References:

- Canadian Remote Sensing Space Systems Act:
<http://laws-lois.justice.gc.ca/eng/acts/R-5.4/index.html>
- Remote Sensing Space Systems Regulations:
<http://laws-lois.justice.gc.ca/PDF/SOR-2007-66.pdf>
- CPC-2-6-02-Licensing of Space Stations:
<https://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf01385.html#s3.3>