

# The Defence Space Safety Program Manual

## Volume 2: Defence Space Safety Regulation

### Introduction

#### Purpose

1. This Volume establishes requirements for the management of Defence space safety.

#### Structure

2. The Defence Space Safety Regulations (DSSR) are comprised of:
  - a. General Requirements (GR), which are set out below in four subparts:
    - i. [GR.100, Scope and Applicability](#) – defines the scope and applicability of the DSSR
    - ii. [GR.200, Space Safety Authorisation](#) – establishes requirements for the issue and maintenance of a Space Safety Authorisation
    - iii. [GR.300, Accidents, Occurrences and Investigations](#) – establishes requirements and provisions for reporting, investigating and addressing occurrences and accidents,
    - iv. [GR.400, Oversight and Enforcement](#) – establishes provisions for the conduct of oversight and enforcement against the regulations.
  - b. the DSSR Parts, which are set out in [Annex A](#).
3. DSSR clauses and sub-clauses may have associated supporting information in the form of:
  - a. **Acceptable Means of Compliance (AMC).** AMC is information published by the Defence Space Safety Regulator to identify a means of meeting one or more requirements of the DSSR. Regulated entities are required to either comply with AMC or propose an Alternative Means of Compliance (AltMoC) to the Defence Space Safety Regulator. Any such proposal will be subject to assessment by the Defence Space Safety Regulator to determine whether the approach is compliant with the DSSR.
  - b. **Guidance Material (GM).** GM provides additional information to assist the application of the requirement and/or explain the AMC.
4. The Defence Space Safety Regulator is referred to as ‘the Regulator’ in AMC and GM.

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**Context**

5. This Volume implements applicable requirements set out in Defence Space Safety Program (DSSP) Manual [Volume 1, Requirements for the DSSP](#).

6. DSSP Manual [Volume 3, DSSP Guidance](#), provides further information to support understanding of, and compliance with, the DSSR.

**Definitions**

7. The following definitions apply within this Volume:

- a. **Accident.** An accident involving a space object occurs if a person dies or suffers serious injury of the operation of the space object.
- b. **Agent (of the Commonwealth).** A person who is authorised by the Commonwealth to conduct space activities on behalf of the Commonwealth and who has consented to perform that role.
- c. **Australian Territory.** Australian territory means the following:
  - the Territory of Australia and of each external Territory
  - the territorial sea of Australia
  - the waters of the sea on the landward side of the territorial sea of Australia, but not within the limits of a State or internal Territory
  - the territorial sea of each external Territory
  - the waters of the sea on the landward side of the territorial sea of each external Territory, but not within the limits of the external Territory.
- d. **Launch.** Launch of a space object means to launch the whole or a part of the object into an area beyond the distance of 100 km above mean sea level, or attempt to do so.
- e. **Launch facility.** A facility (whether fixed or mobile) or place specifically designed or constructed as a facility or place from which space objects can be launched, and includes all other facilities at the facility or place that are necessary to conduct a launch.
- f. **Launch vehicle.** Means any technology designed to project objects into space or near to space, including expendable launch vehicles and reusable launch vehicles.
- g. **Occurrence.** An incident, malfunction, defect, technical defect or exceedance of limitations that endangers or could endanger the safe operation of a space object.
- h. **Payload.** Payload refers to an object carried by a spacecraft that travels over, or returns from over, 100 km above mean sea level.
- i. **Return.** Means return the space object from an area beyond the distance of 100 km above mean sea level to Earth, or attempt to do so.

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- j. **Satellite.** A satellite is a spacecraft with a bus and one or more payloads that orbits around a body in space.
- k. **Satellite payload.** A set of instruments or equipment which performs a user mission.
- l. **Spacecraft.** Crewed or uncrewed vehicle designed to orbit or travel in space.
- m. **Space debris.** All non-functional, artificial objects, including fragments and elements thereof, in Earth orbit or re-entering into Earth's atmosphere.
- n. **Space object.** Means: (a) an object the whole or a part of which is to go into or come back from an area beyond the distance of 100 km above mean sea level; or (b) any part of such an object, even if the part is to go only some of the way towards or back from an area beyond the distance of 100 km above mean sea level.
- o. **Space safety.** The state in which continuing processes of hazard identification and risk management ensure that risks to the health and safety of personnel arising from space activities are eliminated or otherwise minimised so far as is reasonably practicable (SFARP).
- p. **Space Safety Authorisation.** Space Safety Authorisation (SSA) is the generic term for any formal notification document/artefact issued in response to an application from the Defence space safety community in accordance with the Defence Space Safety Regulations. SSA includes, but is not limited to, launch, return and payload permits, and launch facility licences.
- q. **Space Safety Authorisation Holder.** The person in a role responsible for the Space Safety Authorisation, accepting the rights and obligations for the space activity.
- r. **Space System.** A space system is composed of four functional segments (Space Segment, Link Segment, Ground Segment, and User Segment) that provide space-derived services and products.
- s. **UN Space Treaties.** Means the following:
- Convention on International Liability for Damage Caused by Space Objects 1972
  - Convention on Registration of Objects Launched into Outer Space 1972
  - Treaty on Principles Governing the Activities of States in the Exploration and Used of Outer Space, including Moon and Other Celestial Bodies 1967
  - Agreement Governing the Activities of States on the Moon and other Celestial Bodies 1979
  - Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space 1968.
8. Further definitions are available in the [DSSP Glossary](#).

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## General Requirements (\*\***WITHOUT GM**\*\*)

### GR.100: Scope and Applicability

#### GR.110 Scope

- (a) The DSSR focus on protecting human life. ► **GM1** ► **GM2** ► **GM3**
- (b) The following Defence space activities are within scope of the DSSR: ► **GM**
  - (1) launch facilities ► **GM**
  - (2) launches and returns ► **GM**
  - (3) payloads and orbital operations. ► **GM**
- (c) By way of exception from [GR.110\(b\)](#), the Defence Spaceworthiness Authority may declare a Defence space activity to be outside the scope of the DSSR, if compliance with the DSSR will provide negligible benefit to Defence space safety. ► **GM**

#### GR.120 Applicability

- (a) The DSSR are applicable to the following: ► **GM**
  - (1) members of the Australian Defence Force
  - (2) persons acting as an employee of Defence
  - (3) persons acting as an agent of the Commonwealth (Defence)
  - (4) persons in commercial organisations whose contractual arrangement with Defence requires compliance with the DSSR.
- (b) A space activity authorisation issued under the Australian SLR Act or by an international space authority for a Defence space activity does not preclude compliance with the DSSR. ► **GM**

*Note: The term ‘space activity authorisation’ encompasses any formal authorisation, approval, instrument, permit, licence, or similar artefact issued by a government authority.*

- (c) Where Defence intends to sponsor a foreign space activity in Australian territory, the Defence Space Safety Regulator may consult with the Australian Space Agency (ASA) to determine who is the Australian regulatory authority for the activity. ► **GM**

#### GR.130 Flexibility Provisions

- (a) Where an equivalent level of protection to that attained by the application of the DSSR can be achieved by other means, the Defence Space Safety Regulator may approve an exception from those DSSR. ► **GM**
- (b) The Defence Space Safety Regulator may allow a credible and defensible level of military space safety performance where an equivalent level of

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protection to that provided by the application of the DSSR cannot be demonstrated, but can be supported by the application of sound risk management principles. ►GM

- (c) Commanders may deviate from the substantive requirements laid down in the DSSR in the event of compelling operational imperatives or emergencies. ►GM

GR.140 Legal

- (a) Nothing in these regulations supersedes or permits non-compliance with the following: ►GM
- (1) Australian legislation, regulations, rules or bylaws
  - (2) United Nations (UN) Treaties that have been ratified by the Australian Government
  - (3) Defence regulations or higher policies.

**GR.200: Space Safety Authorisation**

GR.210 Issue of a Space Safety Authorisation

- (a) A Space Safety Authorisation (SSA) must be obtained before commencing a Defence space activity within the scope of the DSSP. ►GM
- (b) The following SSAs are available under the DSSR: ►GM
- (1) launch facilities must achieve a licence in accordance with DSSR Launch Facility Licence ([DSSR.LFL](#))
  - (2) launches and/or returns must achieve a permit in accordance with DSSR Launch and/or Return Permit ([DSSR.LRP](#))
  - (3) payloads and orbital operations must achieve a permit in accordance with DSSR Payloads and Orbital Permit ([DSSR.POP](#)).
- (c) Where a Defence space activity includes designs or operations beyond those embodied in [DSSR.LFL](#), [DSSR.LRP](#) or [DSSR.POP](#), the Defence Space Safety Regulator may prescribe supplementary regulations. ►GM
- (d) By way of exception from [GR.210\(b\)](#) and [GR.210\(c\)](#), the Defence Space Safety Regulator may issue a bespoke SSA covering specified conduct that might otherwise be precluded or impracticable under [DSSR.LFL](#), [DSSR.LRP](#) or [DSSR.POP](#). ►GM
- (e) Where the DSSR directs compliance with the specifications and standards in the Defence Space Safety Program Manual of Standards ([MOS](#)), those specifications and standards form part of the DSSR. ►GM
- (f) An Applicant for an SSA must ensure the written application: ►GM
- (1) demonstrates compliance with [DSSR.LFL](#), [DSSR.LRP](#) or [DSSR.POP](#)  
►GM1 ►GM2
  - (2) identifies the intended SSA Holder ►GM

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- (3) presents an exposition for how the SSA Holder will execute their duties.  
▶ **GM**
- (g) In evaluating an application for an SSA, the Defence Space Safety Regulator may:
  - (1) recognise relevant national and international space activity authorisations as contributing to the SSA application ▶ **GM**
  - (2) impose Conditions and/or Limitations on the SSA. ▶ **GM**
- (h) The Defence Space Safety Regulator will issue the SSA to a person in a role with the authority and resources to fulfil the SSA Holder duties. ▶ **GM**
- (i) For the duration of the SSA, the SSA Holder must: ▶ **GM**
  - (1) sustain the safety controls submitted as part of the SSA application
  - (2) meet the SSA Holder duties as set out in:
    - i. [DSSR.LFL](#), [DSSR.LRP](#) or [DSSR.POP](#)
    - ii. [GR.300](#) and [GR.400](#).
  - (3) promote a generative safety culture
  - (4) meet any additional SSA Holder duties that may be levied under the SSA
  - (5) advise the Defence Space Safety Regulator of any change or development that might affect or invalidate the SSA
  - (6) upon vacating the role, ensure the successor understands and accepts the SSA Holder responsibilities
  - (7) recognise that the Defence Space Safety Regulator may suspend, modify or revoke the SSA.
- (j) The Defence Space Safety Regulator may cancel an SSA when the following conditions are met: ▶ **GM**
  - (1) For space facilities: the facility ceases to be used for space launches
  - (2) For space launches and returns: all space activities within the scope of the SSA are completed
  - (3) For payloads and orbital operations:
    - i. all included space objects cease to present a space safety hazard, or
    - ii. Defence ceases to hold any liability for the space objects and associated operations.

**GR.220 Conducting Space Activities**

- (a) Prior to the conduct of any Defence space activity within the scope of the DSSP, commanders and managers who are responsible for the activity must:  
▶ **GM**
  - (1) ensure the activity is covered by a relevant SSA
  - (2) implement controls required to comply with all Conditions and Limitations on the SSA

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- (3) ensure space safety risks to people are eliminated or otherwise minimised so far as is reasonably practicable (SFARP) ► **GM**
- (4) recognise that approvals in addition to an SSA may be required for certain Defence space activities, including but not limited to: ► **GM**
  - i. approvals from Commonwealth, state/territory and local government departments
  - ii. approvals from Defence's internal regulators.
- (b) For the duration of the space activity, commanders and managers who are responsible for the space activity must: ► **GM**
  - (1) continue to meet the obligations in [GR.220\(a\)](#)
  - (2) continue to meet the requirements of the DSSR
  - (3) advise the SSA Holder where a planned activity might require a change to the SSA,
  - (4) recognise that space activity risks outside the scope of the DSSP may require management, including but not limited to: ► **GM**
    - i. damage to property, heritage sites and the environment
    - ii. achievement of Defence's space capability requirements
    - iii. health and safety outside the DSSP scope.
- (c) The commander must inform the Defence Space Safety Regulator if the flexibility provision at [GR.130\(c\)](#) is invoked for a compelling operational imperative or emergency. ► **GM**

## GR.300: Accidents, Occurrences and Investigations

### GR.310 Occurrences

- (a) The SSA Holder must have a system for investigating occurrences and take action to address any identified safety issues. ► **GM**
- (b) Occurrences must be reported to the Defence Space Safety Regulator. ► **GM**

### GR.320 Independent Investigations

- (a) The Defence Spaceworthiness Authority may direct that an independent safety investigation be conducted for an accident involving a Defence space object. ► **GM**
- (b) The SSA Holder, and others involved with the space activity, must cooperate with an independent accident investigation. ► **GM**

## GR.400: Oversight and Enforcement

### GR.410 Obligation to Cooperate

- (a) The SSA Holder must: ► **GM**



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- (1) give the Defence Space Safety Regulator access to staff and data as required to support space safety assurance
- (2) cooperate with the Defence Space Safety Regulator with a view to assuring compliance with the DSSR.

**GR.420 Management of Findings**

- (a) When objective evidence is found showing non-compliance with the applicable requirements of the DSSR, the Defence Space Safety Regulator will issue a finding classified as follows: ► **GM**
  - (1) Level 1 Finding: Any non-compliance with a DSSR requirement that presents a credible serious hazard to space safety and no organisational safety controls remain in place or the organisational safety controls in place are not effective to treat the hazard
  - (2) Level 2 Finding: Any non-compliance with a DSSR requirement that presents a credible hazard to space safety and organisational safety controls remain but the total effectiveness is minimal to treat the hazard
  - (3) Level 3 Finding: Any non-compliance or potential problem that, if left untreated, would likely manifest into a credible hazard to space safety.

**GR.430 Action on Findings**

- (a) After receipt of notification for a Level 1 or Level 2 finding, the SSA Holder must, to the satisfaction of, and within a period agreed by, the Defence Space Safety Regulator: ► **GM**
  - (1) implement an immediate action to eliminate or otherwise minimise SFARP, the space safety risk associated with the non-compliance
  - (2) identify the root cause of the non-compliance
  - (3) define a corrective action plan
  - (4) demonstrate effective corrective action implementation.
- (b) After receipt of notification for a Level 3 finding, the SSA Holder must: ► **GM**
  - (1) manage the finding internally through their own management system
  - (2) implement action as necessary to address the non-compliance or potential problem.

**GR.440 Suspension of a Space Safety Authorisation**

- (a) The Defence Space Safety Regulator may partially or fully suspend the relevant SSA if: ► **GM**
  - (1) the SSA Holder does not comply with the actions identified in [GR.430\(a\)](#)
  - (2) a Condition or Limitation on the SSA is contravened
  - (3) the Defence Space Safety Regulator considers, for reasons associated with elevated safety risks to ADF members or other persons, the SSA should be suspended.



## **Annex A: DSSR Parts**

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- [DSSR.LFL](#), *Launch Facility Licence*
- [DSSR.LRP](#), *Launch and/or Return Permit*
- [DSSR.POP](#), *Payloads and Orbital Permit*