

# ISO 23312:2022-07 (E)

## Space systems - Detailed space debris mitigation requirements for spacecraft

---

<b>Contents</b>		<b>Page</b>
Foreword .....		iv
Introduction .....		v
1	Scope .....	1
2	Normative references .....	1
3	Terms and definitions .....	1
4	Symbols and abbreviated terms .....	2
5	Avoiding release of space debris into Earth orbit during normal operations .....	2
6	Avoiding break-ups in Earth orbit .....	3
6.1	General .....	3
6.2	Accidental break-up caused by an on-board source of energy .....	3
6.2.1	General measures .....	3
6.2.2	Subsystem-specific measures .....	4
6.3	Accidental break-up caused by a collision .....	5
6.3.1	Collision avoidance .....	5
6.3.2	Assessment of the probability of structural break-up caused by impacts with debris or meteoroid .....	6
7	Disposal of spacecraft after the end of mission .....	6
7.1	General .....	6
7.2	Ensuring execution of disposal action .....	6
7.3	Disposal to minimize interference with the GEO protected region .....	7
7.3.1	General .....	7
7.3.2	Developing basic manoeuvre requirements for a stable disposal orbit .....	7
7.3.3	Developing long-term (100-year) disposal orbit characteristics .....	7
7.3.4	Determining the manoeuvre sequence .....	8
7.4	Disposal to minimize interference with the LEO protected region .....	8
7.4.1	General .....	8
7.4.2	Re-entry .....	8
8	Estimating mass of remaining usable propellant .....	9
8.1	General .....	9
8.2	Uncertainty of estimation .....	9
8.3	Incorporating required function into spacecraft design .....	9
8.4	Documentation of data .....	10
9	Space debris mitigation plan .....	10
9.1	General .....	10
9.2	Break-up prevention plan .....	11
9.3	End of mission disposal plan (EOMDP) .....	11
9.4	Contingency plan .....	12
Annex A (informative)	Procedure for estimating probability of accidental break-up .....	13
Annex B (informative)	Examples of estimation methods .....	16

<b>Annex C (informative) Deployable drag enhancement device .....</b>	<b>19</b>
<b>Bibliography .....</b>	<b>20</b>