# INTERNATIONAL STANDARD

ISO 15864

Second edition 2021-07

## Space systems — General test methods for spacecraft, subsystems and units

Systèmes spatiaux — Méthodes d'essai générales pour véhicules spatiaux, sous-systèmes et équipements





### **COPYRIGHT PROTECTED DOCUMENT**

© ISO 2021

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office CP 401 • Ch. de Blandonnet 8 CH-1214 Vernier, Geneva Phone: +41 22 749 01 11 Email: copyright@iso.org Website: www.iso.org

Published in Switzerland

Page

**Contents** 

Fore	eword		vii		
Intr	oductio	n	viii		
1	Scope	e	1		
2	-	native references			
3		s, definitions and abbreviated terms			
3	3.1	Terms and definitions			
	3.2	Abbreviated terms			
4	Gene	ral requirements			
•	4.1	Testing philosophy			
	4.2	Tailoring of requirements			
	4.3	Development tests			
	4.4	Qualification tests			
	4.5	Acceptance tests			
	4.6	Proto-flight tests			
	4.7	Prelaunch validation tests			
	4.8	Retest	5		
		4.8.1 General	5		
		4.8.2 Retest due to design modification after completion of qualification	5		
		4.8.3 Retest due to non-conformance			
		4.8.4 Retest after refurbishment			
		4.8.5 Retest during and after long-term storage			
	4.9	Test documentation			
		4.9.1 General			
		4.9.2 Test plans			
		4.9.3 Test specifications			
		4.9.4 Test procedures			
		4.9.5 Test data			
		4.9.6 Test reports			
	4.10	4.9.7 Test log			
	4.10	Tests facilities and other requirements 4.10.1 General	7 7		
		4.10.2 Test condition tolerances			
		4.10.3 Instrumentation			
_					
5	_	ecraft system tests			
	5.1	Test items and sequence			
	5.2	Test levels and duration	8		
6	Subsy	ystem/unit tests			
	6.1	Test items and sequence			
	6.2	Test levels and duration	8		
7	Test requirements				
	7.1	General			
	7.2	Functional test	16		
		7.2.1 Purpose of test	16		
		7.2.2 Test facilities and set-up as basic requirements			
		7.2.3 Test article configuration			
		7.2.4 Monitoring during test			
		7.2.5 Test levels and duration			
		7.2.6 Test condition and guidelines			
		7.2.7 Tailoring guide			
	7.3	Electromagnetic compatibility (EMC) test			
		7.3.1 Purpose of test			
		7.3.2 Test facilities and set-up as basic requirements	1/		

7.3.5 Test levels and duration 7.3.6 Test condition and guidelines 7.3.7 Tailoring guide 7.4 Magnetic test. 7.4.1 Purpose of test 7.4.2 Test facilities and set-up as basic requirements 7.4.3 Test article configuration 7.4.4 Monitoring during test 7.4.5 Test levels and duration 7.4.6 Test condition and guidelines 7.4.7 Tailoring guide 7.5.1 Purpose of test 7.5.2 Test facilities and set-up as basic requirements 7.5.3 Test article configuration 7.5.4 Monitoring during test 7.5.5 Test levels and duration 7.5.6 Test condition and guidelines 7.5.7 Tailoring guide 7.5.7 Tailoring guide 7.6 Optical alignment measurement 7.6.1 Purpose of test 7.6.2 Test facilities and set-up as basic requirements 7.6.3 Test article configuration 7.6.4 Monitoring during test 7.6.5 Test levels and duration 7.6.6 Test condition and guidelines 7.6.7 Test facilities and set-up as basic requirements 7.6.1 Purpose of test 7.6.2 Test facilities and set-up as basic requirements 7.6.3 Test article configuration 7.6.4 Monitoring during test 7.6.5 Test levels and duration 7.6.6 Test condition and guidelines 7.7.7 Tailoring guide 7.7.8 Test sevels and duration 7.7.9 Test facilities and set-up as basic requirements 7.7.1 Purpose of test 7.7.2 Test facilities and set-up as basic requirements 7.7.3 Test article configuration 7.7.4 Monitoring during test 7.7.5 Test levels and duration 7.7.6 Test condition and guidelines 7.7.7 Purpose of test 7.7.5 Test levels and duration 7.7.6 Test condition and guidelines	Purpose of test       18         Test facilities and set-up as basic requirements       18         Test article configuration       18         Monitoring during test       18         Test levels and duration       18         Test condition and guidelines       18         Tailoring guide       18         pattern test       18         Purpose of test       18         Test facilities and set-up as basic requirements       18         Test article configuration       18         Monitoring during test       19         Test levels and duration       19         Test condition and guidelines       19         Tailoring guide       19         Hignment measurement       19         Purpose of test       19         Test article configuration       19         Test article configuration       19         Monitoring during test       19         Test levels and duration       19         Test levels and duration       19         Test condition and guidelines       19		7.3.3	Test article configuration		
7.3.6 Test condition and guidelines 7.3.7 Tailoring guide 7.4.1 Purpose of test. 7.4.2 Test facilities and set-up as basic requirements 7.4.3 Test article configuration. 7.4.4 Monitoring during test 7.4.5 Test levels and duration. 7.4.6 Test condition and guidelines 7.4.7 Tailoring guide 7.5 Antenna pattern test 7.5.1 Purpose of test. 7.5.2 Test facilities and set-up as basic requirements 7.5.3 Test article configuration. 7.5.4 Monitoring during test 7.5.5 Test levels and duration. 7.5.6 Test condition and guidelines 7.5.7 Tailoring guide 7.6 Optical alignment measurement 7.6.1 Purpose of test. 7.6.2 Test facilities and set-up as basic requirements 7.6.3 Test article configuration 7.6.4 Monitoring during test 7.6.5 Test levels and duration 7.6.6 Test condition and guidelines 7.6.7 Test levels and duration 7.6.6 Test article configuration 7.6.7 Test levels and duration 7.6.6 Test condition and guidelines 7.6.7 Test levels and duration 7.6.8 Test article configuration 7.6.9 Test levels and duration 7.6.1 Test condition and guidelines 7.6.2 Test facilities and set-up as basic requirements 7.6.3 Test article configuration 7.6.4 Monitoring during test 7.7.5 Test levels and duration 7.7.4 Monitoring during test 7.7.5 Test levels and duration 7.7.6 Test levels and duration 7.7.7 Test levels and duration 7.7.8 Test levels and duration 7.7.9 Test levels and duration 7.7.9 Test levels and duration 7.7.9 Test condition and guidelines 7.7.1 Purpose of test 7.7.2 Test levels and duration 7.7.3 Test article configuration 7.7.4 Monitoring during test 7.7.5 Test levels and duration	Test condition and guidelines.         17           Tailoring guide.         17           test.         18           Purpose of test.         18           Test facilities and set-up as basic requirements.         18           Test article configuration.         18           Monitoring during test.         18           Test levels and duration.         18           Test condition and guidelines.         18           Tailoring guide.         18           pattern test.         18           Purpose of test.         18           Test facilities and set-up as basic requirements.         18           Test article configuration.         18           Monitoring during test.         19           Test levels and duration.         19           Test condition and guidelines.         19           Tilloring guide.         19           Ilignment measurement.         19           Purpose of test.         19           Test article configuration.         19           Monitoring during test.         19           Test article configuration.         19           Test condition and guidelines.         19           Test condition and guidelines.         19					
7.3.7 Tailoring guide 7.4.1 Magnetic test 7.4.2 Test facilities and set-up as basic requirements 7.4.3 Test article configuration 7.4.4 Monitoring during test 7.4.5 Test levels and duration 7.4.6 Test condition and guidelines 7.4.7 Tailoring guide 7.5 Antenna pattern test 7.5.1 Purpose of test 7.5.2 Test facilities and set-up as basic requirements 7.5.3 Test article configuration 7.5.4 Monitoring during test 7.5.5 Test levels and duration. 7.5.6 Test condition and guidelines 7.5.7 Tailoring guide 7.6 Optical alignment measurement 7.6.1 Purpose of test 7.6.2 Test facilities and set-up as basic requirements 7.6.3 Test article configuration 7.6.4 Monitoring during test 7.6.5 Test levels and duration 7.6.6 Test condition and guidelines 7.6.7 Tailoring guide 7.7 Test levels and duration 7.8 Test article configuration 7.9 Test article configuration 7.9 Test article configuration 7.1 Purpose of test 7.2 Test facilities and set-up as basic requirements 7.3 Test article configuration 7.4 Monitoring during test 7.5 Test levels and duration 7.7 Physical property measurement 7.7 Purpose of test 7.7 Test facilities and set-up as basic requirements 7.7 Test levels and duration 7.7 Monitoring during test 7.7 Test levels and duration 7.7 Monitoring during test 7.7 Test levels and duration 7.7 Test levels and duration 7.7 Test levels and duration 7.7 Test condition and guidelines	Tailoring guide       17         c test       18         Purpose of test       18         Test facilities and set-up as basic requirements       18         Test article configuration       18         Monitoring during test       18         Test levels and duration       18         Test condition and guidelines       18         Tailoring guide       18         pattern test       18         Purpose of test       18         Test facilities and set-up as basic requirements       18         Test article configuration       18         Monitoring during test       19         Test evels and duration       19         Test condition and guidelines       19         Test condition and guidelines       19         Test facilities and set-up as basic requirements       19         Test facilities and set-up as basic requirements       19         Test article configuration       19         Monitoring during test       19         Test article configuration       19         Test condition and guidelines       19         Test article configuration       20         Test facilities and set-up as basic requirements       20         Test faciliti		7.3.5			
7.4.1 Purpose of test. 7.4.2 Test facilities and set-up as basic requirements. 7.4.3 Test article configuration. 7.4.4 Monitoring during test. 7.4.5 Test levels and duration. 7.4.6 Test condition and guidelines. 7.4.7 Tailoring guide.  7.5 Antenna pattern test. 7.5.1 Purpose of test. 7.5.2 Test facilities and set-up as basic requirements. 7.5.3 Test article configuration. 7.5.4 Monitoring during test. 7.5.5 Test levels and duration. 7.5.6 Test condition and guidelines. 7.5.7 Tailoring guide.  7.6 Optical alignment measurement. 7.6.1 Purpose of test. 7.6.2 Test facilities and set-up as basic requirementss. 7.6.3 Test article configuration. 7.6.4 Monitoring during test. 7.6.5 Test levels and duration. 7.6.6 Test condition and guidelines. 7.6.7 Tailoring guide.  7.7.8 Monitoring during test. 7.6.9 Test levels and duration. 7.6.1 Purpose of test. 7.6.2 Test facilities and set-up as basic requirements. 7.6.3 Test article configuration. 7.6.4 Monitoring during test. 7.6.5 Test levels and duration. 7.6.6 Test condition and guidelines. 7.7.1 Purpose of test. 7.7.2 Test facilities and set-up as basic requirements. 7.7.3 Test article configuration. 7.7.4 Monitoring during test. 7.7.5 Test levels and duration. 7.7.4 Monitoring during test. 7.7.5 Test levels and duration. 7.7.6 Test condition and guidelines.	c test         18           Purpose of test         18           Test facilities and set-up as basic requirements         18           Test article configuration         18           Monitoring during test         18           Test levels and duration         18           Test condition and guidelines         18           Tailoring guide         18           pattern test         18           Purpose of test         18           Test facilities and set-up as basic requirements         18           Test article configuration         18           Monitoring during test         19           Test levels and duration         19           Test condition and guidelines         19           Tailoring guide         19           lignment measurement         19           Purpose of test         19           Test facilities and set-up as basic requirements         19           Test article configuration         19           Monitoring during test         19           Test condition and guidelines         19           Test actilities and set-up as basic requirements         19           Test facilities and set-up as basic requirements         20           Test facilitites and se		7.3.6	Test condition and guidelines	. 1	7
7.4.1 Purpose of test 7.4.2 Test facilities and set-up as basic requirements 7.4.3 Test article configuration 7.4.4 Monitoring during test 7.4.5 Test levels and duration 7.4.6 Test condition and guidelines 7.4.7 Tailoring guide 7.5 Antenna pattern test 7.5.1 Purpose of test 7.5.2 Test facilities and set-up as basic requirements 7.5.3 Test article configuration 7.5.4 Monitoring during test 7.5.5 Test levels and duration 7.5.6 Test condition and guidelines 7.5.7 Tailoring guide 7.6 Optical alignment measurement 7.6.1 Purpose of test 7.6.2 Test facilities and set-up as basic requirements 7.6.3 Test article configuration 7.6.4 Monitoring during test 7.6.5 Test levels and duration 7.6.6 Test condition and guidelines 7.6.7 Tailoring guide 7.7 Physical property measurement 7.7.1 Purpose of test 7.7.2 Test facilities and set-up as basic requirements 7.7.3 Test article configuration 7.6.4 Monitoring during test 7.7.5 Test levels and duration 7.7.6 Test condition and guidelines 7.7.7 Tailoring guide 7.7 Tailoring guide	Purpose of test         18           Test facilities and set-up as basic requirements         18           Test article configuration         18           Monitoring during test         18           Test levels and duration         18           Test condition and guidelines         18           Tailoring guide         18           pattern test         18           Purpose of test         18           Test facilities and set-up as basic requirements         18           Test article configuration         18           Monitoring during test         19           Test levels and duration         19           Test condition and guidelines         19           Tailoring guide         19           Ilignment measurement         19           Purpose of test         19           Test facilities and set-up as basic requirements         19           Test article configuration         19           Monitoring during test         19           Test levels and duration         19           Test condition and guidelines         19           Test facilities and set-up as basic requirements         20           Test facilities and set-up as basic requirements         20           Test		7.3.7	Tailoring guide	. 1	7
7.4.2 Test facilities and set-up as basic requirements 7.4.3 Test article configuration 7.4.4 Monitoring during test. 7.4.5 Test levels and duration 7.4.6 Test condition and guidelines 7.4.7 Tailoring guide 7.5 Antenna pattern test 7.5.1 Purpose of test 7.5.2 Test facilities and set-up as basic requirements 7.5.3 Test article configuration 7.5.4 Monitoring during test. 7.5.5 Test levels and duration 7.5.6 Test condition and guidelines 7.5.7 Tailoring guide 7.6 Optical alignment measurement 7.6.1 Purpose of test 7.6.2 Test facilities and set-up as basic requirements 7.6.3 Test article configuration 7.6.4 Monitoring during test 7.6.5 Test levels and duration 7.6.6 Test condition and guidelines 7.7.7 Tailoring guide 7.7.9 Physical property measurement 7.7.1 Purpose of test 7.7.2 Test facilities and set-up as basic requirements 7.7.3 Test article configuration 7.7.4 Monitoring during test 7.7.5 Test levels and duration 7.7.4 Monitoring during test 7.7.5 Test levels and duration 7.7.4 Monitoring during test 7.7.5 Test levels and duration 7.7.6 Test levels and duration 7.7.7 Post facilities and set-up as basic requirements 7.7.7 Test levels and duration 7.7.8 Test levels and duration 7.7.9 Test levels and duration 7.7.1 Purpose of test 7.7.2 Test facilities and set-up as basic requirements 7.7.3 Test article configuration 7.7.4 Monitoring during test 7.7.5 Test levels and duration 7.7.6 Test condition and guidelines	Test facilities and set-up as basic requirements  Test article configuration  Monitoring during test  Test levels and duration.  18 Test condition and guidelines  Tailoring guide  pattern test  Purpose of test  Test facilities and set-up as basic requirements  18 Test article configuration.  18 Monitoring during test  Test article sand duration.  19 Test condition and guidelines  19 Tilloring guide  19 Tilloring guide  19 Tilloring guide  19 Tilloring guide  19 Test facilities and set-up as basic requirements  19 Test condition and guidelines  19 Test condition and guidelines  19 Test article configuration.  19 Test condition and guidelines.  20 Test facilities and set-up as basic requirements  20 Test facilities and set-up as basic requirements  20 Test facilities and set-up as basic requirements  20 Test article configuration.  20 Monitoring during test  20 Test levels and duration.  20 Test article configuration.  20 Test article configuration.  20 Test article configuration.  20 Test article configuration.  20 Test levels and duration.  20 Test condition and guidelines.  20 Test condition and guidelines.	7.4	Magnet	ic test	. 1	8
7.4.3 Test article configuration 7.4.4 Monitoring during test. 7.4.5 Test levels and duration 7.4.6 Test condition and guidelines 7.4.7 Tailoring guide 7.5 Antenna pattern test 7.5.1 Purpose of test 7.5.2 Test facilities and set-up as basic requirements 7.5.3 Test article configuration 7.5.4 Monitoring during test 7.5.5 Test levels and duration 7.5.6 Test condition and guidelines 7.5.7 Tailoring guide 7.6 Optical alignment measurement 7.6.1 Purpose of test 7.6.2 Test facilities and set-up as basic requirements 7.6.3 Test article configuration 7.6.4 Monitoring during test 7.6.5 Test levels and duration 7.6.6 Test condition and guidelines 7.7.7 Tailoring guide 7.7 Physical property measurement 7.7.1 Purpose of test 7.7.2 Test facilities and set-up as basic requirements 7.7.3 Test article configuration 7.7.4 Monitoring during test 7.7.5 Test levels and duration 7.7.4 Monitoring during test 7.7.5 Test levels and duration 7.7.6 Test levels and duration 7.7.7 Propose of test 7.7.8 Test article configuration 7.7.9 Test facilities and set-up as basic requirements 7.7.1 Purpose of test 7.7.2 Test facilities and set-up as basic requirements 7.7.3 Test article configuration 7.7.4 Monitoring during test 7.7.5 Test levels and duration 7.7.6 Test condition and guidelines	Test article configuration         18           Monitoring during test         18           Test levels and duration         18           Test condition and guidelines         18           Tailoring guide         18           pattern test         18           Purpose of test         18           Test facilities and set-up as basic requirements         18           Test article configuration         18           Monitoring during test         19           Test levels and duration         19           Test condition and guidelines         19           Tailoring guide         19           Hignment measurement         19           Purpose of test         19           Test facilities and set-up as basic requirements         19           Test article configuration         19           Monitoring during test         19           Test levels and duration         19           Test condition and guidelines         19           Test facilities and set-up as basic requirements         20		7.4.1	Purpose of test	. 1	8
7.4.3 Test article configuration 7.4.4 Monitoring during test. 7.4.5 Test levels and duration 7.4.6 Test condition and guidelines 7.4.7 Tailoring guide 7.5 Antenna pattern test 7.5.1 Purpose of test 7.5.2 Test facilities and set-up as basic requirements 7.5.3 Test article configuration 7.5.4 Monitoring during test 7.5.5 Test levels and duration 7.5.6 Test condition and guidelines 7.5.7 Tailoring guide 7.6 Optical alignment measurement 7.6.1 Purpose of test 7.6.2 Test facilities and set-up as basic requirements 7.6.3 Test article configuration 7.6.4 Monitoring during test 7.6.5 Test levels and duration 7.6.6 Test condition and guidelines 7.7.7 Tailoring guide 7.7 Physical property measurement 7.7.1 Purpose of test 7.7.2 Test facilities and set-up as basic requirements 7.7.3 Test article configuration 7.7.4 Monitoring during test 7.7.5 Test levels and duration 7.7.4 Monitoring during test 7.7.5 Test levels and duration 7.7.6 Test levels and duration 7.7.7 Propose of test 7.7.8 Test article configuration 7.7.9 Test facilities and set-up as basic requirements 7.7.1 Purpose of test 7.7.2 Test facilities and set-up as basic requirements 7.7.3 Test article configuration 7.7.4 Monitoring during test 7.7.5 Test levels and duration 7.7.6 Test condition and guidelines	Test article configuration         18           Monitoring during test         18           Test levels and duration         18           Test condition and guidelines         18           Tailoring guide         18           pattern test         18           Purpose of test         18           Test facilities and set-up as basic requirements         18           Test article configuration         18           Monitoring during test         19           Test levels and duration         19           Test condition and guidelines         19           Tailoring guide         19           Hignment measurement         19           Purpose of test         19           Test facilities and set-up as basic requirements         19           Test article configuration         19           Monitoring during test         19           Test levels and duration         19           Test condition and guidelines         19           Test facilities and set-up as basic requirements         20		7.4.2	Test facilities and set-up as basic requirements	. 1	8
7.4.4 Monitoring during test 7.4.5 Test levels and duration 7.4.6 Test condition and guidelines 7.4.7 Tailoring guide 7.5 Antenna pattern test 7.5.1 Purpose of test. 7.5.2 Test facilities and set-up as basic requirements 7.5.3 Test article configuration 7.5.4 Monitoring during test. 7.5.5 Test levels and duration 7.5.6 Test condition and guidelines 7.5.7 Tailoring guide 7.6 Optical alignment measurement 7.6.1 Purpose of test 7.6.2 Test facilities and set-up as basic requirements 7.6.3 Test article configuration 7.6.4 Monitoring during test 7.6.5 Test levels and duration 7.6.6 Test condition and guidelines 7.7.6 Test levels and duration 7.6.7 Tailoring guide 7.7 Physical property measurement 7.7.1 Purpose of test 7.7.2 Test facilities and set-up as basic requirements 7.7.3 Test article configuration 7.7.4 Monitoring during test 7.7.5 Test levels and duration 7.7.7 Test article configuration 7.7.7 Test article configuration 7.7.8 Test article configuration 7.7.9 Test facilities and set-up as basic requirements 7.7.1 Purpose of test 7.7.2 Test facilities and set-up as basic requirements 7.7.3 Test article configuration 7.7.4 Monitoring during test 7.7.5 Test levels and duration 7.7.6 Test condition and guidelines	Monitoring during test       18         Test levels and duration       18         Test condition and guidelines       18         Tailoring guide       18         pattern test       18         Purpose of test       18         Test facilities and set-up as basic requirements       18         Test article configuration       18         Monitoring during test       19         Test levels and duration       19         Test condition and guidelines       19         Tailoring guide       19         lignment measurement       19         Purpose of test       19         Test facilities and set-up as basic requirements       19         Test article configuration       19         Monitoring during test       19         Test condition and guidelines       19         Test condition and guidelines       19         Test facilities and set-up as basic requirements       20         Test facilities and set-up as bas		7.4.3			
7.4.5 Test levels and duration 7.4.6 Test condition and guidelines 7.4.7 Tailoring guide 7.5 Antenna pattern test 7.5.1 Purpose of test 7.5.2 Test facilities and set-up as basic requirements 7.5.3 Test article configuration 7.5.4 Monitoring during test 7.5.5 Test levels and duration 7.5.6 Test condition and guidelines 7.5.7 Tailoring guide 7.6 Optical alignment measurement 7.6.1 Purpose of test 7.6.2 Test facilities and set-up as basic requirements 7.6.3 Test article configuration 7.6.4 Monitoring during test 7.6.5 Test levels and duration 7.6.6 Test condition and guidelines 7.6.7 Tailoring guide 7.7 Physical property measurement 7.7.1 Purpose of test 7.7.2 Test facilities and set-up as basic requirements 7.7.3 Test article configuration 7.7.4 Monitoring during test 7.7.5 Test levels and duration 7.7.4 Monitoring during test 7.7.5 Test levels and duration 7.7.7 Test facilities and set-up as basic requirements 7.7.1 Purpose of test 7.7.2 Test facilities and set-up as basic requirements 7.7.3 Test article configuration 7.7.4 Monitoring during test 7.7.5 Test levels and duration 7.7.6 Test condition and guidelines	Test levels and duration		7.4.4			
7.4.6 Test condition and guidelines 7.4.7 Tailoring guide 7.5 Antenna pattern test 7.5.1 Purpose of test 7.5.2 Test facilities and set-up as basic requirements 7.5.3 Test article configuration 7.5.4 Monitoring during test 7.5.5 Test levels and duration 7.5.6 Test condition and guidelines 7.5.7 Tailoring guide 7.6 Optical alignment measurement 7.6.1 Purpose of test 7.6.2 Test facilities and set-up as basic requirements 7.6.3 Test article configuration 7.6.4 Monitoring during test 7.6.5 Test levels and duration 7.6.6 Test condition and guidelines 7.7.1 Purpose of test 7.7.2 Test facilities and set-up as basic requirements 7.7.3 Test article configuration 7.7.4 Monitoring guide 7.7.7 Physical property measurement 7.7.8 Test facilities and set-up as basic requirements 7.7.9 Test facilities and set-up as basic requirements 7.7.1 Purpose of test 7.7.2 Test facilities and set-up as basic requirements 7.7.3 Test article configuration 7.7.4 Monitoring during test 7.7.5 Test levels and duration 7.7.6 Test condition and guidelines	Test condition and guidelines       18         Tailoring guide       18         pattern test       18         Purpose of test       18         Test facilities and set-up as basic requirements       18         Test article configuration       18         Monitoring during test       19         Test levels and duration       19         Test condition and guidelines       19         Tailoring guide       19         lignment measurement       19         Purpose of test       19         Test facilities and set-up as basic requirements       19         Test article configuration       19         Monitoring during test       19         Test condition and guidelines       19         Test condition and guidelines       19         Tailoring guide       19         property measurement       20         Purpose of test       20         Test facilities and set-up as basic requirements       20         Test article configuration       20         Monitoring during test       20         Test article configuration       20         Test article configuration       20         Test article configuration       20		7.4.5			
7.4.7 Tailoring guide 7.5 Antenna pattern test 7.5.1 Purpose of test 7.5.2 Test facilities and set-up as basic requirements 7.5.3 Test article configuration 7.5.4 Monitoring during test 7.5.5 Test levels and duration 7.5.6 Test condition and guidelines 7.5.7 Tailoring guide 7.6 Optical alignment measurement 7.6.1 Purpose of test 7.6.2 Test facilities and set-up as basic requirements 7.6.3 Test article configuration 7.6.4 Monitoring during test 7.6.5 Test levels and duration 7.6.6 Test condition and guidelines 7.7.1 Purpose of test 7.7.1 Purpose of test 7.7.2 Test facilities and set-up as basic requirements 7.7.3 Test article configuration 7.7.4 Monitoring guide 7.7.5 Test levels and duration 7.7.6 Test configuration 7.7.7 Test facilities and set-up as basic requirements 7.7.7 Test facilities and duration 7.7.8 Test article configuration 7.7.9 Test facilities and duration 7.7.1 Test condition and guidelines	Tailoring guide       18         pattern test       18         Purpose of test       18         Test facilities and set-up as basic requirements       18         Test article configuration       18         Monitoring during test       19         Test levels and duration       19         Test condition and guidelines       19         Tailoring guide       19         Ilignment measurement       19         Purpose of test       19         Test facilities and set-up as basic requirements       19         Test article configuration       19         Monitoring during test       19         Test levels and duration       19         Test condition and guidelines       19         Tailoring guide       19         property measurement       20         Purpose of test       20         Test facilities and set-up as basic requirements       20         Test article configuration       20         Monitoring during test       20         Test article configuration       20         Test article sand duration       20         Test levels and duration       20         Test levels and duration       20		7.4.6	Test condition and guidelines	. 1	8
7.5 Antenna pattern test 7.5.1 Purpose of test 7.5.2 Test facilities and set-up as basic requirements 7.5.3 Test article configuration 7.5.4 Monitoring during test 7.5.5 Test levels and duration 7.5.6 Test condition and guidelines 7.5.7 Tailoring guide  7.6 Optical alignment measurement 7.6.1 Purpose of test 7.6.2 Test facilities and set-up as basic requirements 7.6.3 Test article configuration 7.6.4 Monitoring during test 7.6.5 Test levels and duration 7.6.6 Test condition and guidelines 7.6.7 Tailoring guide  7.7 Physical property measurement 7.7.1 Purpose of test 7.7.2 Test facilities and set-up as basic requirements 7.7.3 Test article configuration 7.7.4 Monitoring during test 7.7.5 Test levels and duration 7.7.6 Test condition and guidelines 7.7.7 Test facilities and set-up as basic requirements 7.7.7 Test levels and duration 7.7.4 Monitoring during test 7.7.5 Test levels and duration 7.7.6 Test condition and guidelines	pattern test         18           Purpose of test         18           Test facilities and set-up as basic requirements         18           Test article configuration         18           Monitoring during test         19           Test levels and duration         19           Test condition and guidelines         19           Tailoring guide         19           lignment measurement         19           Purpose of test         19           Test facilities and set-up as basic requirements         19           Test article configuration         19           Monitoring during test         19           Test levels and duration         19           Test condition and guidelines         19           Tailoring guide         19           property measurement         20           Purpose of test         20           Test facilities and set-up as basic requirements         20           Test article configuration         20           Monitoring during test         20           Test article configuration         20           Monitoring during test         20           Test levels and duration         20           Test levels and duration         20		7.4.7			
7.5.1 Purpose of test	Purpose of test       18         Test facilities and set-up as basic requirements       18         Test article configuration       18         Monitoring during test       19         Test levels and duration       19         Test condition and guidelines       19         Tailoring guide       19         Ilignment measurement       19         Purpose of test       19         Test facilities and set-up as basic requirements       19         Test article configuration       19         Monitoring during test       19         Test levels and duration       19         Test condition and guidelines       19         Tailoring guide       19         property measurement       20         Purpose of test       20         Test facilities and set-up as basic requirements       20         Test article configuration       20         Monitoring during test       20         Test article configuration       20         Monitoring during test       20         Test levels and duration       20         Test levels and duration       20         Test condition and guidelines       20	7.5				
7.5.2 Test facilities and set-up as basic requirements. 7.5.3 Test article configuration. 7.5.4 Monitoring during test. 7.5.5 Test levels and duration. 7.5.6 Test condition and guidelines. 7.5.7 Tailoring guide.  7.6 Optical alignment measurement. 7.6.1 Purpose of test. 7.6.2 Test facilities and set-up as basic requirements. 7.6.3 Test article configuration. 7.6.4 Monitoring during test. 7.6.5 Test levels and duration. 7.6.6 Test condition and guidelines. 7.6.7 Tailoring guide.  7.7 Physical property measurement. 7.7.1 Purpose of test. 7.7.2 Test facilities and set-up as basic requirements. 7.7.3 Test article configuration. 7.7.4 Monitoring during test. 7.7.5 Test levels and duration. 7.7.6 Test condition and guidelines. 7.7.7 Test article configuration. 7.7.8 Test article configuration. 7.7.9 Test levels and duration. 7.7.1 Test levels and duration. 7.7.2 Test levels and duration. 7.7.3 Test article configuration. 7.7.4 Monitoring during test. 7.7.5 Test levels and duration. 7.7.6 Test condition and guidelines.	Test facilities and set-up as basic requirements       18         Test article configuration       18         Monitoring during test       19         Test levels and duration       19         Test condition and guidelines       19         Tailoring guide       19         lignment measurement       19         Purpose of test       19         Test facilities and set-up as basic requirements       19         Test article configuration       19         Monitoring during test       19         Test levels and duration       19         Test condition and guidelines       19         Tailoring guide       19         property measurement       20         Purpose of test       20         Test facilities and set-up as basic requirements       20         Test article configuration       20         Monitoring during test       20         Test levels and duration       20         Test levels and duration       20         Test condition and guidelines       20          Test condition and guidelines       20			•		
7.5.3 Test article configuration. 7.5.4 Monitoring during test. 7.5.5 Test levels and duration. 7.5.6 Test condition and guidelines 7.5.7 Tailoring guide  7.6 Optical alignment measurement. 7.6.1 Purpose of test. 7.6.2 Test facilities and set-up as basic requirements 7.6.3 Test article configuration. 7.6.4 Monitoring during test. 7.6.5 Test levels and duration. 7.6.6 Test condition and guidelines 7.6.7 Tailoring guide  7.7 Physical property measurement. 7.7.1 Purpose of test. 7.7.2 Test facilities and set-up as basic requirements 7.7.3 Test article configuration. 7.7.4 Monitoring during test. 7.7.5 Test levels and duration. 7.7.6 Test condition and guidelines 7.7.7.7 Test article configuration. 7.7.8 Test article configuration. 7.7.9 Test levels and duration. 7.7.1 Test condition and guidelines.	Test article configuration       18         Monitoring during test       19         Test levels and duration       19         Test condition and guidelines       19         Tailoring guide       19         lignment measurement       19         Purpose of test       19         Test facilities and set-up as basic requirements       19         Test article configuration       19         Monitoring during test       19         Test levels and duration       19         Test condition and guidelines       19         Tailoring guide       19         property measurement       20         Purpose of test       20         Test facilities and set-up as basic requirements       20         Test article configuration       20         Monitoring during test       20         Test levels and duration       20         Test levels and duration       20         Test condition and guidelines       20         Test condition and guidelines       20          Test condition and guidelines       20					
7.5.4 Monitoring during test. 7.5.5 Test levels and duration. 7.5.6 Test condition and guidelines. 7.5.7 Tailoring guide.  7.6 Optical alignment measurement. 7.6.1 Purpose of test. 7.6.2 Test facilities and set-up as basic requirements. 7.6.3 Test article configuration. 7.6.4 Monitoring during test. 7.6.5 Test levels and duration. 7.6.6 Test condition and guidelines. 7.6.7 Tailoring guide.  7.7 Physical property measurement. 7.7.1 Purpose of test. 7.7.2 Test facilities and set-up as basic requirements. 7.7.3 Test article configuration. 7.7.4 Monitoring during test. 7.7.5 Test levels and duration. 7.7.6 Test condition and guidelines. 7.7.7 Test levels and duration. 7.7.8 Test levels and duration. 7.7.9 Test condition and guidelines.	Monitoring during test       19         Test levels and duration       19         Test condition and guidelines       19         Tailoring guide       19         lignment measurement       19         Purpose of test       19         Test facilities and set-up as basic requirements       19         Test article configuration       19         Monitoring during test       19         Test levels and duration       19         Test condition and guidelines       19         Tailoring guide       19         property measurement       20         Purpose of test       20         Test facilities and set-up as basic requirements       20         Test article configuration       20         Monitoring during test       20         Test levels and duration       20         Test levels and duration       20         Test condition and guidelines       20					
7.5.5 Test levels and duration 7.5.6 Test condition and guidelines 7.5.7 Tailoring guide  7.6 Optical alignment measurement 7.6.1 Purpose of test 7.6.2 Test facilities and set-up as basic requirements 7.6.3 Test article configuration 7.6.4 Monitoring during test 7.6.5 Test levels and duration 7.6.6 Test condition and guidelines 7.6.7 Tailoring guide  7.7 Physical property measurement 7.7.1 Purpose of test 7.7.2 Test facilities and set-up as basic requirements 7.7.3 Test article configuration 7.7.4 Monitoring during test 7.7.5 Test levels and duration 7.7.6 Test condition and guidelines	Test levels and duration       19         Test condition and guidelines       19         Tailoring guide       19         lignment measurement       19         Purpose of test       19         Test facilities and set-up as basic requirements       19         Test article configuration       19         Monitoring during test       19         Test levels and duration       19         Test condition and guidelines       19         Tailoring guide       19         property measurement       20         Purpose of test       20         Test facilities and set-up as basic requirements       20         Test article configuration       20         Monitoring during test       20         Test levels and duration       20         Test levels and duration       20         Test condition and guidelines       20					
7.5.6 Test condition and guidelines 7.5.7 Tailoring guide 7.6 Optical alignment measurement 7.6.1 Purpose of test 7.6.2 Test facilities and set-up as basic requirements 7.6.3 Test article configuration 7.6.4 Monitoring during test 7.6.5 Test levels and duration 7.6.6 Test condition and guidelines 7.6.7 Tailoring guide 7.7 Physical property measurement 7.7.1 Purpose of test 7.7.2 Test facilities and set-up as basic requirements 7.7.3 Test article configuration 7.7.4 Monitoring during test 7.7.5 Test levels and duration 7.7.6 Test condition and guidelines	Test condition and guidelines       19         Tailoring guide       19         lignment measurement       19         Purpose of test       19         Test facilities and set-up as basic requirements       19         Test article configuration       19         Monitoring during test       19         Test levels and duration       19         Test condition and guidelines       19         Tailoring guide       19         property measurement       20         Purpose of test       20         Test facilities and set-up as basic requirements       20         Test article configuration       20         Monitoring during test       20         Test levels and duration       20         Test levels and duration       20         Test condition and guidelines       20					
7.5.7 Tailoring guide 7.6 Optical alignment measurement 7.6.1 Purpose of test 7.6.2 Test facilities and set-up as basic requirements 7.6.3 Test article configuration 7.6.4 Monitoring during test 7.6.5 Test levels and duration 7.6.6 Test condition and guidelines 7.6.7 Tailoring guide 7.7 Physical property measurement 7.7.1 Purpose of test 7.7.2 Test facilities and set-up as basic requirements 7.7.3 Test article configuration 7.7.4 Monitoring during test 7.7.5 Test levels and duration 7.7.6 Test condition and guidelines	Tailoring guide       19         lignment measurement       19         Purpose of test       19         Test facilities and set-up as basic requirements       19         Test article configuration       19         Monitoring during test       19         Test levels and duration       19         Test condition and guidelines       19         Tailoring guide       19         property measurement       20         Purpose of test       20         Test facilities and set-up as basic requirements       20         Test article configuration       20         Monitoring during test       20         Test levels and duration       20         Test levels and duration       20         Test condition and guidelines       20					
7.6 Optical alignment measurement 7.6.1 Purpose of test 7.6.2 Test facilities and set-up as basic requirements 7.6.3 Test article configuration 7.6.4 Monitoring during test 7.6.5 Test levels and duration 7.6.6 Test condition and guidelines 7.6.7 Tailoring guide 7.7 Physical property measurement 7.7.1 Purpose of test 7.7.2 Test facilities and set-up as basic requirements 7.7.3 Test article configuration 7.7.4 Monitoring during test 7.7.5 Test levels and duration 7.7.6 Test condition and guidelines	Ilignment measurement       19         Purpose of test       19         Test facilities and set-up as basic requirements       19         Test article configuration       19         Monitoring during test       19         Test levels and duration       19         Test condition and guidelines       19         Tailoring guide       19         property measurement       20         Purpose of test       20         Test facilities and set-up as basic requirements       20         Test article configuration       20         Monitoring during test       20         Test levels and duration       20         Test condition and guidelines       20					
7.6.1 Purpose of test 7.6.2 Test facilities and set-up as basic requirements 7.6.3 Test article configuration 7.6.4 Monitoring during test 7.6.5 Test levels and duration 7.6.6 Test condition and guidelines 7.6.7 Tailoring guide 7.7 Physical property measurement 7.7.1 Purpose of test 7.7.2 Test facilities and set-up as basic requirements 7.7.3 Test article configuration 7.7.4 Monitoring during test 7.7.5 Test levels and duration 7.7.6 Test condition and guidelines	Purpose of test       19         Test facilities and set-up as basic requirements       19         Test article configuration       19         Monitoring during test       19         Test levels and duration       19         Test condition and guidelines       19         Tailoring guide       19         property measurement       20         Purpose of test       20         Test facilities and set-up as basic requirements       20         Test article configuration       20         Monitoring during test       20         Test levels and duration       20         Test condition and guidelines       20	76				
7.6.2 Test facilities and set-up as basic requirements 7.6.3 Test article configuration 7.6.4 Monitoring during test 7.6.5 Test levels and duration 7.6.6 Test condition and guidelines 7.6.7 Tailoring guide 7.7 Physical property measurement 7.7.1 Purpose of test 7.7.2 Test facilities and set-up as basic requirements 7.7.3 Test article configuration 7.7.4 Monitoring during test 7.7.5 Test levels and duration 7.7.6 Test condition and guidelines	Test facilities and set-up as basic requirements       19         Test article configuration       19         Monitoring during test       19         Test levels and duration       19         Test condition and guidelines       19         Tailoring guide       19         property measurement       20         Purpose of test       20         Test facilities and set-up as basic requirements       20         Test article configuration       20         Monitoring during test       20         Test levels and duration       20         Test condition and guidelines       20	7.0				
7.6.3 Test article configuration 7.6.4 Monitoring during test 7.6.5 Test levels and duration 7.6.6 Test condition and guidelines 7.6.7 Tailoring guide  7.7 Physical property measurement 7.7.1 Purpose of test 7.7.2 Test facilities and set-up as basic requirements 7.7.3 Test article configuration 7.7.4 Monitoring during test 7.7.5 Test levels and duration 7.7.6 Test condition and guidelines	Test article configuration       19         Monitoring during test       19         Test levels and duration       19         Test condition and guidelines       19         Tailoring guide       19         property measurement       20         Purpose of test       20         Test facilities and set-up as basic requirements       20         Test article configuration       20         Monitoring during test       20         Test levels and duration       20         Test condition and guidelines       20			<u> </u>		
7.6.4 Monitoring during test	Monitoring during test       19         Test levels and duration       19         Test condition and guidelines       19         Tailoring guide       19         property measurement       20         Purpose of test       20         Test facilities and set-up as basic requirements       20         Test article configuration       20         Monitoring during test       20         Test levels and duration       20         Test condition and guidelines       20					
7.6.5 Test levels and duration 7.6.6 Test condition and guidelines 7.6.7 Tailoring guide 7.7 Physical property measurement 7.7.1 Purpose of test 7.7.2 Test facilities and set-up as basic requirements 7.7.3 Test article configuration 7.7.4 Monitoring during test 7.7.5 Test levels and duration 7.7.6 Test condition and guidelines	Test levels and duration       19         Test condition and guidelines       19         Tailoring guide       19         property measurement       20         Purpose of test       20         Test facilities and set-up as basic requirements       20         Test article configuration       20         Monitoring during test       20         Test levels and duration       20         Test condition and guidelines       20					
7.6.6 Test condition and guidelines 7.6.7 Tailoring guide 7.7 Physical property measurement 7.7.1 Purpose of test 7.7.2 Test facilities and set-up as basic requirements 7.7.3 Test article configuration 7.7.4 Monitoring during test 7.7.5 Test levels and duration 7.7.6 Test condition and guidelines	Test condition and guidelines       19         Tailoring guide       19         property measurement       20         Purpose of test       20         Test facilities and set-up as basic requirements       20         Test article configuration       20         Monitoring during test       20         Test levels and duration       20         Test condition and guidelines       20					
7.6.7 Tailoring guide  7.7 Physical property measurement  7.7.1 Purpose of test  7.7.2 Test facilities and set-up as basic requirements  7.7.3 Test article configuration  7.7.4 Monitoring during test  7.7.5 Test levels and duration  7.7.6 Test condition and guidelines	Tailoring guide       19         property measurement       20         Purpose of test       20         Test facilities and set-up as basic requirements       20         Test article configuration       20         Monitoring during test       20         Test levels and duration       20         Test condition and guidelines       20					
7.7 Physical property measurement 7.7.1 Purpose of test 7.7.2 Test facilities and set-up as basic requirements 7.7.3 Test article configuration 7.7.4 Monitoring during test 7.7.5 Test levels and duration 7.7.6 Test condition and guidelines	property measurement       20         Purpose of test       20         Test facilities and set-up as basic requirements       20         Test article configuration       20         Monitoring during test       20         Test levels and duration       20         Test condition and guidelines       20					
7.7.1 Purpose of test 7.7.2 Test facilities and set-up as basic requirements 7.7.3 Test article configuration 7.7.4 Monitoring during test 7.7.5 Test levels and duration 7.7.6 Test condition and guidelines	Purpose of test       20         Test facilities and set-up as basic requirements       20         Test article configuration       20         Monitoring during test       20         Test levels and duration       20         Test condition and guidelines       20	77	_			
7.7.2 Test facilities and set-up as basic requirements. 7.7.3 Test article configuration. 7.7.4 Monitoring during test. 7.7.5 Test levels and duration. 7.7.6 Test condition and guidelines.	Test facilities and set-up as basic requirements	/./				
7.7.3 Test article configuration	Test article configuration					
7.7.4 Monitoring during test	Monitoring during test20Test levels and duration20Test condition and guidelines20					
7.7.5 Test levels and duration	Test levels and duration 20 Test condition and guidelines 20					
7.7.6 Test condition and guidelines	Test condition and guidelines 20					
/ / / Ialioring gilide	Talloring guide					
		7.0				
7.8 Dynamic balance	: balance20	7.8	-			
	Purpose of test					
	Purpose of test 20 Test facilities and set-up as basic requirements 20					
	Purpose of test 20 Test facilities and set-up as basic requirements 20 Test article configuration 20					
785 Test levels and duration	Purpose of test 20 Test facilities and set-up as basic requirements 20 Test article configuration 20 Monitoring during test 21					
	Purpose of test 20 Test facilities and set-up as basic requirements 20 Test article configuration 20 Monitoring during test 21 Test levels and duration 21					
7.8.6 Test condition and guidelines	Purpose of test       20         Test facilities and set-up as basic requirements       20         Test article configuration       20         Monitoring during test       21         Test levels and duration       21         Test condition and guidelines       21					
7.8.6 Test condition and guidelines	Purpose of test       20         Test facilities and set-up as basic requirements       20         Test article configuration       20         Monitoring during test       21         Test levels and duration       21         Test condition and guidelines       21         Tailoring guide       21	7.9				
7.8.6 Test condition and guidelines 7.8.7 Tailoring guide 7.9 Launcher/spacecraft interface test	Purpose of test       20         Test facilities and set-up as basic requirements       20         Test article configuration       20         Monitoring during test       21         Test levels and duration       21         Test condition and guidelines       21         Tailoring guide       21         r/spacecraft interface test       21					
7.8.6 Test condition and guidelines 7.8.7 Tailoring guide 7.9 Launcher/spacecraft interface test 7.9.1 Purpose of test	Purpose of test       20         Test facilities and set-up as basic requirements       20         Test article configuration       20         Monitoring during test       21         Test levels and duration       21         Test condition and guidelines       21         Tailoring guide       21         r/spacecraft interface test       21         Purpose of test       21					
7.8.6 Test condition and guidelines 7.8.7 Tailoring guide 7.9 Launcher/spacecraft interface test 7.9.1 Purpose of test 7.9.2 Test facilities and set-up as basic requirements	Purpose of test       20         Test facilities and set-up as basic requirements       20         Test article configuration       20         Monitoring during test       21         Test levels and duration       21         Test condition and guidelines       21         Tailoring guide       21         r/spacecraft interface test       21         Purpose of test       21         Test facilities and set-up as basic requirements       21					
7.8.6 Test condition and guidelines 7.8.7 Tailoring guide 7.9 Launcher/spacecraft interface test 7.9.1 Purpose of test 7.9.2 Test facilities and set-up as basic requirements	Purpose of test       20         Test facilities and set-up as basic requirements       20         Test article configuration       20         Monitoring during test       21         Test levels and duration       21         Test condition and guidelines       21         Tailoring guide       21         r/spacecraft interface test       21         Purpose of test       21		7.9.4	Monitoring during test	. 2	1
7.8.6 Test condition and guidelines 7.8.7 Tailoring guide 7.9 Launcher/spacecraft interface test 7.9.1 Purpose of test 7.9.2 Test facilities and set-up as basic requirements 7.9.3 Test article configuration	Purpose of test       20         Test facilities and set-up as basic requirements       20         Test article configuration       20         Monitoring during test       21         Test levels and duration       21         Test condition and guidelines       21         Tailoring guide       21         r/spacecraft interface test       21         Purpose of test       21         Test facilities and set-up as basic requirements       21		7.9.5			
7.8.6 Test condition and guidelines 7.8.7 Tailoring guide 7.9 Launcher/spacecraft interface test 7.9.1 Purpose of test 7.9.2 Test facilities and set-up as basic requirements 7.9.3 Test article configuration 7.9.4 Monitoring during test 7.9.5 Test levels and duration	Purpose of test       20         Test facilities and set-up as basic requirements       20         Test article configuration       20         Monitoring during test       21         Test levels and duration       21         Test condition and guidelines       21         Tailoring guide       21         r/spacecraft interface test       21         Purpose of test       21         Test facilities and set-up as basic requirements       21         Test article configuration       21         Monitoring during test       21         Test levels and duration       21		7.9.6			
7.8.6 Test condition and guidelines 7.8.7 Tailoring guide 7.9 Launcher/spacecraft interface test 7.9.1 Purpose of test 7.9.2 Test facilities and set-up as basic requirements 7.9.3 Test article configuration 7.9.4 Monitoring during test 7.9.5 Test levels and duration 7.9.6 Test condition and guidelines	Purpose of test       20         Test facilities and set-up as basic requirements       20         Test article configuration       20         Monitoring during test       21         Test levels and duration       21         Test condition and guidelines       21         Tailoring guide       21         r/spacecraft interface test       21         Purpose of test       21         Test facilities and set-up as basic requirements       21         Test article configuration       21         Monitoring during test       21         Test levels and duration       21         Test condition and guidelines       21		7.9.7	Tailoring guide	. 2	2
7.8.6 Test condition and guidelines 7.8.7 Tailoring guide 7.9 Launcher/spacecraft interface test 7.9.1 Purpose of test 7.9.2 Test facilities and set-up as basic requirements 7.9.3 Test article configuration 7.9.4 Monitoring during test 7.9.5 Test levels and duration 7.9.6 Test condition and guidelines 7.9.7 Tailoring guide	Purpose of test       20         Test facilities and set-up as basic requirements       20         Test article configuration       20         Monitoring during test       21         Test levels and duration       21         Test condition and guidelines       21         Tailoring guide       21         r/spacecraft interface test       21         Purpose of test       21         Test facilities and set-up as basic requirements       21         Test article configuration       21         Monitoring during test       21         Test levels and duration       21         Test condition and guidelines       21         Tailoring guide       22	7.10	Static lo	oad test	. 2	2
7.8.6 Test condition and guidelines 7.8.7 Tailoring guide 7.9 Launcher/spacecraft interface test 7.9.1 Purpose of test 7.9.2 Test facilities and set-up as basic requirements 7.9.3 Test article configuration 7.9.4 Monitoring during test 7.9.5 Test levels and duration 7.9.6 Test condition and guidelines 7.9.7 Tailoring guide	Purpose of test       20         Test facilities and set-up as basic requirements       20         Test article configuration       20         Monitoring during test       21         Test levels and duration       21         Test condition and guidelines       21         Tailoring guide       21         r/spacecraft interface test       21         Purpose of test       21         Test facilities and set-up as basic requirements       21         Test article configuration       21         Monitoring during test       21         Test levels and duration       21         Test condition and guidelines       21         Tailoring guide       22		7.10.1	Purpose of test	. 2	2
7.8.6 Test condition and guidelines 7.8.7 Tailoring guide 7.9 Launcher/spacecraft interface test 7.9.1 Purpose of test 7.9.2 Test facilities and set-up as basic requirements 7.9.3 Test article configuration 7.9.4 Monitoring during test 7.9.5 Test levels and duration 7.9.6 Test condition and guidelines 7.9.7 Tailoring guide 7.10 Static load test	Purpose of test       20         Test facilities and set-up as basic requirements       20         Test article configuration       20         Monitoring during test       21         Test levels and duration       21         Test condition and guidelines       21         Tailoring guide       21         r/spacecraft interface test       21         Purpose of test       21         Test facilities and set-up as basic requirements       21         Test article configuration       21         Monitoring during test       21         Test levels and duration       21         Test condition and guidelines       21         Tailoring guide       22		7.10.2	Test facilities and set-up as basic requirements	. 2	2
7.8.6 Test condition and guidelines 7.8.7 Tailoring guide 7.9 Launcher/spacecraft interface test 7.9.1 Purpose of test 7.9.2 Test facilities and set-up as basic requirements 7.9.3 Test article configuration 7.9.4 Monitoring during test 7.9.5 Test levels and duration 7.9.6 Test condition and guidelines 7.9.7 Tailoring guide 7.10 Static load test 7.10.1 Purpose of test	Purpose of test       20         Test facilities and set-up as basic requirements       20         Test article configuration       20         Monitoring during test       21         Test levels and duration       21         Test condition and guidelines       21         Tailoring guide       21         r/spacecraft interface test       21         Purpose of test       21         Test facilities and set-up as basic requirements       21         Test article configuration       21         Monitoring during test       21         Test levels and duration       21         Test condition and guidelines       21         Tailoring guide       22         ad test       22		7.10.3			
7.8.6 Test condition and guidelines 7.8.7 Tailoring guide 7.9 Launcher/spacecraft interface test 7.9.1 Purpose of test 7.9.2 Test facilities and set-up as basic requirements 7.9.3 Test article configuration 7.9.4 Monitoring during test 7.9.5 Test levels and duration 7.9.6 Test condition and guidelines 7.9.7 Tailoring guide 7.10 Static load test 7.10.1 Purpose of test 7.10.2 Test facilities and set-up as basic requirements	Purpose of test20Test facilities and set-up as basic requirements20Test article configuration20Monitoring during test21Test levels and duration21Test condition and guidelines21Tailoring guide21r/spacecraft interface test21Purpose of test21Test facilities and set-up as basic requirements21Test article configuration21Monitoring during test21Test levels and duration21Test condition and guidelines21Tailoring guide22ad test22Purpose of test22		7.10.4	Monitoring during test	. 2	2
7.8.1 Purpose of test			7.8.1	Purpose of test	. 2	0
7.8.2 Test facilities and set-up as basic requirements			7.8.2	Test facilities and set-up as basic requirements.	. 2	0
	Purpose of test					
O Company of the comp	Purpose of test 20 Test facilities and set-up as basic requirements 20					
	Purpose of test 20 Test facilities and set-up as basic requirements 20 Test article configuration 20					
7.8.5 Test levels and duration	Purpose of test 20 Test facilities and set-up as basic requirements 20 Test article configuration 20 Monitoring during test 21		7.8.5	Test levels and duration	. 2	1
7.0.5 Test levels and duration	Purpose of test 20 Test facilities and set-up as basic requirements 20 Test article configuration 20 Monitoring during test 21		7.8.6	Test condition and guidelines	. 2	1
	Purpose of test 20 Test facilities and set-up as basic requirements 20 Test article configuration 20 Monitoring during test 21 Test levels and duration 21					
7.8.6 Test condition and guidelines	Purpose of test       20         Test facilities and set-up as basic requirements       20         Test article configuration       20         Monitoring during test       21         Test levels and duration       21         Test condition and guidelines       21	7.0				
7.8.6 Test condition and guidelines	Purpose of test       20         Test facilities and set-up as basic requirements       20         Test article configuration       20         Monitoring during test       21         Test levels and duration       21         Test condition and guidelines       21         Tailoring guide       21	7.9				
7.8.6 Test condition and guidelines 7.8.7 Tailoring guide 7.9 Launcher/spacecraft interface test	Purpose of test       20         Test facilities and set-up as basic requirements       20         Test article configuration       20         Monitoring during test       21         Test levels and duration       21         Test condition and guidelines       21         Tailoring guide       21         r/spacecraft interface test       21					
7.8.6 Test condition and guidelines 7.8.7 Tailoring guide 7.9 Launcher/spacecraft interface test 7.9.1 Purpose of test	Purpose of test       20         Test facilities and set-up as basic requirements       20         Test article configuration       20         Monitoring during test       21         Test levels and duration       21         Test condition and guidelines       21         Tailoring guide       21         r/spacecraft interface test       21         Purpose of test       21					
7.8.6 Test condition and guidelines 7.8.7 Tailoring guide 7.9 Launcher/spacecraft interface test 7.9.1 Purpose of test 7.9.2 Test facilities and set-up as basic requirements	Purpose of test       20         Test facilities and set-up as basic requirements       20         Test article configuration       20         Monitoring during test       21         Test levels and duration       21         Test condition and guidelines       21         Tailoring guide       21         r/spacecraft interface test       21         Purpose of test       21         Test facilities and set-up as basic requirements       21		7.9.4			
7.8.6 Test condition and guidelines 7.8.7 Tailoring guide 7.9 Launcher/spacecraft interface test 7.9.1 Purpose of test 7.9.2 Test facilities and set-up as basic requirements 7.9.3 Test article configuration	Purpose of test         20           Test facilities and set-up as basic requirements         20           Test article configuration         20           Monitoring during test         21           Test levels and duration         21           Test condition and guidelines         21           Tailoring guide         21           r/spacecraft interface test         21           Purpose of test         21           Test facilities and set-up as basic requirements         21           Test article configuration         21		7.9.5			
7.8.6 Test condition and guidelines 7.8.7 Tailoring guide 7.9 Launcher/spacecraft interface test 7.9.1 Purpose of test 7.9.2 Test facilities and set-up as basic requirements 7.9.3 Test article configuration 7.9.4 Monitoring during test	Purpose of test       20         Test facilities and set-up as basic requirements       20         Test article configuration       20         Monitoring during test       21         Test levels and duration       21         Test condition and guidelines       21         Tailoring guide       21         r/spacecraft interface test       21         Purpose of test       21         Test facilities and set-up as basic requirements       21         Test article configuration       21         Monitoring during test       21		7.9.6	Test condition and guidelines	. 2	1
7.8.6 Test condition and guidelines 7.8.7 Tailoring guide 7.9 Launcher/spacecraft interface test 7.9.1 Purpose of test 7.9.2 Test facilities and set-up as basic requirements 7.9.3 Test article configuration 7.9.4 Monitoring during test 7.9.5 Test levels and duration 7.9.6 Test condition and guidelines	Purpose of test       20         Test facilities and set-up as basic requirements       20         Test article configuration       20         Monitoring during test       21         Test levels and duration       21         Test condition and guidelines       21         Tailoring guide       21         r/spacecraft interface test       21         Purpose of test       21         Test facilities and set-up as basic requirements       21         Test article configuration       21         Monitoring during test       21         Test levels and duration       21         Test condition and guidelines       21		7.9.7	Tailoring guide	. 2	2
7.8.6 Test condition and guidelines 7.8.7 Tailoring guide 7.9 Launcher/spacecraft interface test 7.9.1 Purpose of test 7.9.2 Test facilities and set-up as basic requirements 7.9.3 Test article configuration 7.9.4 Monitoring during test 7.9.5 Test levels and duration 7.9.6 Test condition and guidelines 7.9.7 Tailoring guide	Purpose of test       20         Test facilities and set-up as basic requirements       20         Test article configuration       20         Monitoring during test       21         Test levels and duration       21         Test condition and guidelines       21         Tailoring guide       21         r/spacecraft interface test       21         Purpose of test       21         Test facilities and set-up as basic requirements       21         Test article configuration       21         Monitoring during test       21         Test levels and duration       21         Test condition and guidelines       21         Tailoring guide       22	7.10				
7.8.6 Test condition and guidelines 7.8.7 Tailoring guide 7.9 Launcher/spacecraft interface test 7.9.1 Purpose of test 7.9.2 Test facilities and set-up as basic requirements 7.9.3 Test article configuration 7.9.4 Monitoring during test 7.9.5 Test levels and duration 7.9.6 Test condition and guidelines 7.9.7 Tailoring guide 7.10 Static load test	Purpose of test       20         Test facilities and set-up as basic requirements       20         Test article configuration       20         Monitoring during test       21         Test levels and duration       21         Test condition and guidelines       21         Tailoring guide       21         r/spacecraft interface test       21         Purpose of test       21         Test facilities and set-up as basic requirements       21         Test article configuration       21         Monitoring during test       21         Test levels and duration       21         Test condition and guidelines       21         Tailoring guide       22         ad test       22			<u> </u>		
7.8.6 Test condition and guidelines 7.8.7 Tailoring guide 7.9 Launcher/spacecraft interface test 7.9.1 Purpose of test 7.9.2 Test facilities and set-up as basic requirements 7.9.3 Test article configuration 7.9.4 Monitoring during test 7.9.5 Test levels and duration 7.9.6 Test condition and guidelines 7.9.7 Tailoring guide 7.10 Static load test 7.10.1 Purpose of test	Purpose of test       20         Test facilities and set-up as basic requirements       20         Test article configuration       20         Monitoring during test       21         Test levels and duration       21         Test condition and guidelines       21         Tailoring guide       21         r/spacecraft interface test       21         Purpose of test       21         Test facilities and set-up as basic requirements       21         Test article configuration       21         Monitoring during test       21         Test levels and duration       21         Test condition and guidelines       21         Tailoring guide       22         ad test       22         Purpose of test       22					
7.8.6 Test condition and guidelines 7.8.7 Tailoring guide 7.9 Launcher/spacecraft interface test 7.9.1 Purpose of test 7.9.2 Test facilities and set-up as basic requirements 7.9.3 Test article configuration 7.9.4 Monitoring during test 7.9.5 Test levels and duration 7.9.6 Test condition and guidelines 7.9.7 Tailoring guide 7.10 Static load test 7.10.1 Purpose of test 7.10.2 Test facilities and set-up as basic requirements	Purpose of test       20         Test facilities and set-up as basic requirements       20         Test article configuration       20         Monitoring during test       21         Test levels and duration       21         Test condition and guidelines       21         Tailoring guide       21         r/spacecraft interface test       21         Purpose of test       21         Test facilities and set-up as basic requirements       21         Test article configuration       21         Monitoring during test       21         Test levels and duration       21         Test condition and guidelines       21         Tailoring guide       22         ad test       22         Purpose of test       22         Test facilities and set-up as basic requirements       22					
7.8.6 Test condition and guidelines 7.8.7 Tailoring guide 7.9 Launcher/spacecraft interface test 7.9.1 Purpose of test 7.9.2 Test facilities and set-up as basic requirements 7.9.3 Test article configuration 7.9.4 Monitoring during test 7.9.5 Test levels and duration 7.9.6 Test condition and guidelines 7.9.7 Tailoring guide 7.10 Static load test 7.10.1 Purpose of test 7.10.2 Test facilities and set-up as basic requirements 7.10.3 Test article configuration	Purpose of test.       20         Test facilities and set-up as basic requirements       20         Test article configuration       20         Monitoring during test.       21         Test levels and duration       21         Test condition and guidelines.       21         Tailoring guide       21         r/spacecraft interface test       21         Purpose of test       21         Test facilities and set-up as basic requirements       21         Test article configuration       21         Monitoring during test       21         Test levels and duration       21         Test condition and guidelines       21         Tailoring guide       22         ad test       22         Purpose of test       22         Test facilities and set-up as basic requirements       22         Test article configuration       22          Test article configuration       22		7.10.4	Monitoring during test	. 2	2

	7.10.5	Test levels and duration	
	7.10.6	Test condition and guidelines	
	7.10.7	Tailoring guide	22
7.11	Acceler	ation test	22
	7.11.1	Purpose of test	
	7.11.2	Test facilities and set-up as basic requirements	23
	7.11.3	Test article configuration	23
	7.11.4	Monitoring during test	23
	7.11.5	Test levels and duration	23
	7.11.6	Test condition and guidelines	23
	7.11.7	Tailoring guide	23
7.12	Modal s	survey	23
	7.12.1	Purpose of test	
	7.12.2	Test facilities and set-up as basic requirements	
	7.12.3	Test article configuration	
	7.12.4	Monitoring during test	
	7.12.5	Test levels and duration	
	7.12.6	Test condition and guidelines	
	7.12.7	Tailoring guide	
7.13		dal vibration test	
	7.13.1	Purpose of test	
	7.13.2	Test facilities and set-up as basic requirements	
	7.13.3	Test article configuration	
	7.13.4	Monitoring during test	
	7.13.5	Test levels and duration	
	7.13.6	Test condition and guidelines	
	7.13.7	Tailoring guide	
7.14		n vibration test	
7.11	7.14.1	Purpose of test	
	7.14.2	Test facilities and set-up as basic requirements	
	7.14.3	Test article configuration	
	7.14.4	Monitoring during test	
	7.14.5	Test levels and duration	
	7.14.5	Test condition and guidelines	
	7.14.7	Tailoring guide	
7.15		ic test	
7.13		Purpose of test	
	7.13.1	Test facilities and set-up as basic requirements	26
	7.15.2	Test article configuration	26
		S .	
	7.15.4 7.15.5	Monitoring during test	
	7.15.5	Test levels and duration	
	7.15.0	Test condition and guidelines	
716		Tailoring guideest	
7.16			
	7.16.1	Purpose of test	
	7.16.2	Test facilities and set-up as basic requirements	
	7.16.3	Test article configuration	
	7.16.4	Monitoring during test	
	7.16.5	Test levels and duration	
	7.16.6	Test condition and guidelines	
<b>747</b>	7.16.7	Tailoring guide	
7.17		al balance test	
	7.17.1	Purpose of test	
	7.17.2	Test facilities and set-up as basic requirements	
	7.17.3	Test article configuration	
	7.17.4	Monitoring during test	
	7.17.5	Test levels and duration	
	7.17.6	Test condition and guidelines	28

		Tailoring guide	
7.18	Therma	al vacuum test	
	7.18.1	Purpose of test	
	7.18.2	Test facilities and set-up as basic requirements	29
	7.18.3	Test article configuration	29
	7.18.4	Monitoring during test	29
	7.18.5	Test levels and duration	29
	7.18.6	Test condition and guidelines	30
	7.18.7	Tailoring guide	
7.19	Therma	al cycle test	
	7.19.1	Purpose of test	
	7.19.2	Test facilities and set-up as basic requirements	30
	7.19.3	Test article configuration	
	7.19.4	Monitoring during test	
	7.19.5	Test levels and duration	
	7.19.6	Test condition and guidelines	
	7.19.7	Tailoring guide	
7.20		re test	
	7.20.1	Purpose of test	
	7.20.2	Test facilities and set-up as basic requirements	
	7.20.3	Test article configuration	
	7.20.4	Monitoring during test	
	7.20.5	Test levels and duration	
	7.20.6	Test condition and guidelines	
	7.20.7	Tailoring guide	
7.21		e test	
	7.21.1	Purpose of test	
	7.21.2	Test facilities and set-up as basic requirements	
	7.21.3	Test article configuration	
	7.21.4	Monitoring during test	
	7.21.5	Test levels and duration	
	7.21.6	Test condition and guidelines	
	7.21.7	Tailoring guide	
7.22		and wear-in test	
,	7.22.1	Purpose of test	
	7.22.2		
	7.22.3	Test article configuration	
		Monitoring during test	
	7.22.5	Test levels and duration	
	7.22.6	Test condition and guidelines	
	7.22.7	Tailoring guide	
7.23		ng and control system/spacecraft compatibility test	
7.20	7.23.1	Purpose of test	
	7.23.2	Test facilities and set-up as basic requirements	34
	7.23.3	Test article configuration	
	7.23.4	Monitoring during test	
	7.23.4	Test levels and duration	
	7.23.6	Test condition and guidelines	
	7.23.7	Tailoring guide	
	1.20.1	1411011115 Suluc	

#### Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see <a href="www.iso.org/directives">www.iso.org/directives</a>).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see <a href="https://www.iso.org/patents">www.iso.org/patents</a>).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see <a href="https://www.iso.org/iso/foreword.html">www.iso.org/iso/foreword.html</a>.

This document was prepared by Technical Committee ISO/TC 20, *Aircraft and space vehicles*, Subcommittee SC 14, *Space systems and operations*.

This second edition cancels and replaces the first edition (ISO 15864:2004), which has been technically revised.

The main changes compared to the previous edition are as follows:

- harmonized expressions throughout this document, including terminologies;
- added necessary but minimum modifications to requirements such as traceability in <u>4.9.6</u> and magnetic test in <u>7.4</u>;
- added the most current published documents as normative references: ISO 19924 and ISO 21494.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at <a href="https://www.iso.org/members.html">www.iso.org/members.html</a>.

#### Introduction

Throughout this document, the minimum essential criteria are identified by the use of the keyword "should" and, while not mandatory, are considered to be of primary importance in providing serviceable, economical and practical designs. Deviations from the recommended criteria should occur only after careful consideration, extensive testing and thorough service evaluation have shown alternative methods to be satisfactory. The acceptance criteria, specifications or procedures, and other detail test requirements applicable to a particular programme are defined in the applicable technical specifications and statement of work. When requirements have to be verified by measuring product performance and function under various simulated environments, the method is referred to as "Test". The requirements of this document may be tailored for each specific space programme application.