

DIN EN 16602-20:2014-12 (E)

Space product assurance - Quality assurance, English version EN 16602-20:2014

Contents

Page

Foreword	5
1 Scope	6
2 Normative references	7
3 Terms and definitions	8
3.1 Terms from other standards.....	8
3.2 Terms specific to the present standard	8
3.3 Abbreviated terms and symbols.....	10
3.4 Nomenclature	11
4 Quality assurance principles	12
4.1 QA management principles.....	12
4.2 General principles.....	12
4.3 Design and verification principles.....	12
4.4 Procurement principles	13
4.5 Manufacturing, assembly and integration principles.....	13
4.6 Testing principles.....	13
4.7 Acceptance and delivery principles.....	13
4.8 GSE principles.....	13
5 Quality assurance requirements	14
5.1 QA management requirements.....	14
5.1.1 Quality assurance plan.....	14
5.1.2 Personnel training and certification	14
5.2 QA general requirements.....	14
5.2.1 Critical-items control.....	14
5.2.2 Nonconformance control system	14
5.2.3 Management of alerts	15
5.2.4 Acceptance authority media	15
5.2.5 Traceability	15
5.2.6 Metrology and calibration	16
5.2.7 Handling, storage and preservation.....	17

5.2.8	Statistical quality control and analysis	18
5.3	QA requirements for design and verification	19
5.3.1	Design rules	19
5.3.2	Verification	19
5.4	QA requirements for procurement.....	22
5.4.1	Selection of procurement sources	22
5.4.2	Procurement documents	23
5.4.3	Surveillance of procurement sources	23
5.4.4	Receiving inspection	24
5.5	QA requirements for manufacturing, assembly and integration.....	26
5.5.1	Planning of manufacturing, assembly and integration activities and associated documents	26
5.5.2	Manufacturing readiness reviews	27
5.5.3	Control of processes	27
5.5.4	Workmanship standards.....	28
5.5.5	Materials and parts control	28
5.5.6	Equipment control	29
5.5.7	Cleanliness and contamination control.....	29
5.5.8	Inspection	30
5.5.9	Specific requirements for assembly and integration	32
5.5.10	Manufacturing, assembly and integration records	32
5.5.11	Electrostatic discharge control (ESD).....	32
5.6	QA requirements for testing	33
5.6.1	Test facilities	33
5.6.2	Test equipment	33
5.6.3	Test documentation.....	33
5.6.4	Test performance monitoring	33
5.6.5	Test reviews.....	34
5.7	QA requirements for acceptance and delivery	34
5.7.1	Acceptance and delivery process.....	34
5.7.2	End item data package	34
5.7.3	Delivery review board (DRB).....	35
5.7.4	Preparation for delivery	36
5.7.5	Delivery.....	36
5.8	QA requirements for ground support equipment (GSE)	36
5.8.1	Design, development and verification.....	36
5.8.2	Configuration control.....	37
5.8.3	Production.....	37

5.8.4	Acceptance and delivery	37
5.8.5	<<deleted, requirements moved to 5.8.4.2>>	38
5.8.6	<<deleted, requirements moved to 5.8.4.3>>	38
5.8.7	<<deleted, requirements moved to 5.8.4.4>>	38
5.8.8	General requirements	38
5.8.9	Maintenance	39
6	Pre-tailoring matrix per space product types	40
	Annex A (normative) QA plan - DRD	49
	Annex B (normative) End item data package (EIDP) - DRD	51
	Annex C (normative) Logbook - DRD	53
	Annex D (normative) Certificate of conformity (CoC) - DRD.....	55
	Annex E (informative) Example of a logbook cover page.....	57
	Annex F (informative) Example of EIDP cover page	58
	Annex G (informative) Example of EIDP contents	59
	Annex H (informative) Example of Certificate of conformity	60
	Annex I (informative) QA document requirement list.....	61
	Annex J (informative) ECSS-Q-ST-20 applicability according to programme phases	62
	Bibliography.....	65
 Tables		
	Table I-1 : QA document requirement list with respect to milestones.....	61
	Table J-1 : ECSS-Q-ST-20C Requirements per programme phase.....	62