

ISO/TS 18667:2018-02 (E)

Space systems - Capability-based Safety, Dependability, and Quality Assurance (SD&QA) programme management

Contents		Page
Foreword		v
Introduction		vi
1	Scope	1
2	Normative references	1
3	Terms, definitions and abbreviated terms	1
3.1	Terms and definitions	2
3.2	Abbreviated terms	4
4	Objectives, policy and principles -- General	5
4.1	Objectives	5
4.2	Policy	5
4.3	Principles	6
5	Instructions	9
5.1	General	9
5.2	Authorize SD&QA programme	9
5.2.1	General	9
5.2.2	Safety programme	10
5.2.3	Dependability programme	10
5.2.4	Quality Assurance (QA) programme	10
5.2.5	Assign qualified managers, leads, engineers, and technicians to SD&QA programme	10
5.2.6	Continuously improve the SD&QA process	10
5.3	Define/identify, assess, and flow down the SD&QA requirements	10
5.3.1	Flow down the essential SD&QA requirements	11
5.3.2	Conflicting SD&QA requirements disposition criteria	12
5.4	Planning the SD&QA programme	12
5.4.1	General	12
5.4.2	Select SD&QA processes based on Product Unit-Value/Criticality Categories	16
5.4.3	Define SD&QA process implementation phasing based on systems engineering life cycle phases/milestones	16
5.4.4	Identify the SD&QA guidance sources	19
5.4.5	Establish the Technical Performance Metrics	19
5.5	Coordinate the SD&QA processes with other product assurance processes	19
5.5.1	General	19
5.5.2	Coordinate Project's and Subcontractor's SD&QA Activities	19
5.5.3	Establish, utilize, and maintain a project SD&QA database system	20
5.6	Apply engineering and evaluation methods to identify system and process deficiencies.20 5.6.1 General	20
5.6.2	Define the system failure criteria and identify failure modes	20
5.6.3	Assess maturity of key input data, constraints, ground rules, and analytical assumptions	22
5.7	SD&QA risk assessment and control	23
5.7.1	Integrate SD&QA with programme-wide technical risk management processes 23 5.7.2 SD&QA risk management responsibilities	23
5.7.3	SD&QA Programme Self-Inspections	24
5.7.4	SD&QA risk identification	25
5.7.5	Qualitative SD&QA risk likelihood assessment	27

5.7.6	Quantitative SD&QA risk likelihood assessment	30
5.7.7	SD&QA risk mitigation assessment	30
5.7.8	SD&QA risk tracking	30
5.7.9	SD&QA risk level assessment	31
5.7.10	Separate ESOH/system safety risk management	32
5.7.11	Present SD&QA risk status using a single risk matrix format	32
5.7.12	Perform structured SD&QA reviews	35
5.7.13	Apply SD&QA lessons learned	36
5.8	Verify SD&QA requirements are met	36
Annex A (informative) Fundamental SD&QA Processes		37
Annex B (informative) Capability-based Safety, Dependability and Quality Assurance Programme tailoring requirements template		39
Annex C (informative) Safety, Dependability and Quality Assurance (SD&QA) programme andProcessDefinitions		44
Annex D (informative) Space systems safety-critical and mission-critical unacceptable conditions checklist (Cont.)		63
Bibliography		66