

Table of contents

- European Foreword.....6**
- Introduction.....7**
- 1 Scope.....8**
- 2 Normative references9**
- 3 Terms, definitions and abbreviated terms.....10**
 - 3.1 Terms from other standards.....10
 - 3.2 Terms specific to the present standard10
 - 3.3 Abbreviated terms.....17
 - 3.4 Conventions.....19
 - 3.4.1 Names of DEVICE development phases and reviews19
 - 3.4.2 Companies involved in the DEVICE development.....20
 - 3.4.3 Types of DEVICES and requirements tailoring tag notation20
 - 3.5 Nomenclature21
- 4 Principles22**
 - 4.1 DEVICE development.....22
 - 4.2 Verification methods22
- 5 DEVICE engineering.....23**
 - 5.1 General requirements.....23
 - 5.1.1 Overview.....23
 - 5.1.2 Tailoring according to DEVICE type and DEVICE criticality.....23
 - 5.1.3 DEVICE engineering development flow.....23
 - 5.1.4 Phase Reviews25
 - 5.1.5 DEVICE Verification Control Document.....25
 - 5.2 DEVICE Definition Phase27
 - 5.2.1 Overview27
 - 5.2.2 DEVICE Requirements Specification.....27
 - 5.2.3 DEVICE Development Plan.....27
 - 5.2.4 Preliminary Verification and Validation Plans28
 - 5.2.5 Preliminary DEVICE Support and Maintenance Plan28

5.2.6	Feasibility and Risk Assessment	28
5.2.7	DEVICE Definition Phase Review	29
5.3	DEVICE Architecture Definition Phase.....	29
5.3.1	Overview	29
5.3.2	Architecture Definition	29
5.3.3	Updated DEVICE Verification and Validation Plans.....	30
5.3.4	DEVICE Architecture Definition Phase Review.....	30
5.4	DEVICE Design and Verification Phase.....	30
5.4.1	Overview	30
5.4.2	DEVICE Verification Plan	31
5.4.3	DEVICE Design and Verification	31
5.4.4	DEVICE Database	32
5.4.5	Preliminary DEVICE Data Sheet	33
5.4.6	DEVICE Design and Verification Phase Review.....	33
5.5	DEVICE Detailed Design Phase	34
5.5.1	Overview	34
5.5.2	Netlist Generation	34
5.5.3	Netlist verification	36
5.5.4	DEVICE Data Sheet update	36
5.5.5	DEVICE Database update.....	36
5.5.6	DEVICE Detailed Design Phase Review	37
5.6	DEVICE Layout Phase.....	37
5.6.1	Overview	37
5.6.2	Layout generation	37
5.6.3	Layout verification	39
5.6.4	DEVICE Validation Plan	39
5.6.5	DEVICE Database update.....	39
5.6.6	DEVICE Data Sheet update	39
5.6.7	Preliminary ESCC Detail Specification	39
5.6.8	DEVICE Layout Phase Review	40
5.7	DEVICE Implementation Phase	40
5.7.1	Overview	40
5.7.2	Production and test	41
5.7.3	DEVICE Database update.....	41
5.7.4	DEVICE Validation Plan completion	42
5.7.5	DEVICE Implementation Phase Review	42
5.8	DEVICE Validation, Qualification and Acceptance Phase	42

5.8.1	Overview	42
5.8.2	DEVICE validation.....	43
5.8.3	DEVICE Support and Maintenance	43
5.8.4	Experience Summary Report	43
5.8.5	Final versions of application and procurement documents	44
5.8.6	DEVICE Validation, Qualification and Acceptance Phase Review	44
6	Pre-tailoring according to DEVICE criticality and type	46
6.1	DEVICE criticality categories	46
6.2	Pre-tailoring Matrix.....	49
Annex A	(normative) DEVICE Requirements Specification (DRS) - DRD	93
Annex B	(normative) DEVICE Development Plan (DDP) - DRD.....	98
Annex C	(normative) DEVICE Verification Plan (DVeP) - DRD.....	101
Annex D	(normative) DEVICE Validation Plan (DVaP) - DRD	106
Annex E	(normative) DEVICE Support and Maintenance Plan (DSMP) - DRD.....	108
Annex F	(normative) DEVICE Feasibility and Risk Assessment Report (DFRAR) - DRD.....	110
Annex G	(normative) DEVICE Architecture Definition Report (DADR) - DRD... 	114
Annex H	(normative) DEVICE Data Sheet (DDS) - DRD	117
Annex I	(normative) Experience Summary Report - DRD	119
Annex J	(informative) Generic Development Flow Variations	120
Annex K	(informative) DEVICE Development Expected Outputs	126
Annex L	(informative) Equivalence of phase and milestone terminology of ECSS-M-ST-10 and ECSS-E-ST-20-40.....	134
Bibliography	139

Figures

Figure 5-1:	DEVICE development flow (generic case)	26
Figure J-1 :	Example of DEVICE development flow with intermediate additional reviews ...	121
Figure J-2 :	Example of DEVICE development flow variation with two DEVICE modules developed and reviewed in parallel	122
Figure J-3 :	Example of DEVICE development flow variation where three phases have been merged	124

Figure J-4 : Example of DEVICE development flow where three phases are iterated 125

Tables

Table 6-1: DEVICE criticality categories47

Table 6-2: Pre-tailoring Matrix50

Table K-1 : Summary of expected outputs of engineering flow 126

Table K-2 : ECSS-E-ST-20-40 and ECSS-Q-ST-60-03 list of expected document
outputs 128

Table L-1 : Equivalence of phase and milestone terminology of ECSS-M-ST-10 and
ECSS-E-ST-20-40..... 135