

DIN EN 16602-60-02:2014-12 (E)

Space product assurance - ASIC and FPGA development; English version EN 16602-60-02:2014

Contents	Page
Foreword	5
Introduction.....	6
1 Scope.....	7
2 Normative references	8
3 Terms, definitions and abbreviated terms.....	9
3.1 Terms from other standards.....	9
3.2 Terms specific to the present standard	9
3.3 Abbreviated terms.....	12
4 ASIC and FPGA programme management.....	14
4.1 General.....	14
4.1.1 Introduction	14
4.1.2 Organization.....	14
4.1.3 Planning.....	14
4.2 ASIC and FPGA control plan	14
4.3 Management planning tools.....	15
4.3.1 ASIC and FPGA development plan	15
4.3.2 Verification plan	15
4.3.3 Design validation plan	15
4.4 Experience summary report.....	15
5 ASIC and FPGA engineering	16
5.1 Introduction.....	16
5.2 General requirements	16
5.3 Definition phase.....	19
5.3.1 Introduction	19
5.3.2 General requirements	19
5.3.3 Feasibility and risk assessment.....	19
5.3.4 ASIC and FPGA development plan	20
5.3.5 System requirements review	20
5.4 Architectural design	22
5.4.1 General requirements	22
5.4.2 Architecture definition.....	22

5.4.3	Verification plan	23
5.4.4	Architecture verification and optimization	23
5.4.5	Preliminary data sheet	24
5.4.6	Preliminary design review	24
5.5	Detailed design.....	24
5.5.1	Introduction	24
5.5.2	General requirements	25
5.5.3	Design entry.....	25
5.5.4	Netlist generation	26
5.5.5	Netlist verification	27
5.5.6	Updated data sheet.....	28
5.5.7	Detailed design review	28
5.6	Layout.....	29
5.6.1	General requirements	29
5.6.2	Layout generation	29
5.6.3	Layout verification	30
5.6.4	Design validation plan	31
5.6.5	Updated data sheet.....	31
5.6.6	Draft detail specification	31
5.6.7	Critical design review	31
5.7	Prototype implementation	32
5.7.1	Introduction	32
5.7.2	Production and test	32
5.8	Design validation and release	33
5.8.1	Design validation.....	33
5.8.2	Radiation test performance	33
5.8.3	Design release and FM production preparation.....	34
5.8.4	Experience summary report	34
5.8.5	Final versions of application and procurement documents	34
5.8.6	Qualification and acceptance review	35
6	Quality assurance system	36
6.1	General.....	36
6.2	Review meetings	36
6.3	Risk assessment and risk management.....	38
7	Development documentation	39
7.1	General.....	39
7.2	Management documentation	39

7.3	Design documentation	40
7.3.1	General	40
7.3.2	Definition phase documentation	42
7.3.3	Architectural design documentation	42
7.3.4	Detailed design documentation	42
7.3.5	Layout documentation	43
7.3.6	Design validation documentation	43
7.4	Application and procurement documents	43
7.4.1	Data sheet	43
7.4.2	Application note	43
7.4.3	Detail specification	44
8	Deliverables	45
8.1	General.....	45
8.2	Deliverable items	45
Annex A (normative)	ASIC and FPGA control plan (ACP) – DRD	46
Annex B (normative)	ASIC and FPGA development plan (ADP) – DRD	48
Annex C (normative)	ASIC and FPGA requirements specification (ARS) – DRD	50
Annex D (normative)	Feasibility and risk assessment report (FRA) - DRD	52
Annex E (normative)	Verification plan (VP) – DRD	53
Annex F (normative)	Design validation plan (DVP) – DRD.....	54
Annex G (normative)	Data sheet – DRD.....	55
Annex H (normative)	Detail specification (DS) – DRD	57
Annex I (normative)	Experience summary report – DRD	59
Annex J (informative)	Document requirements list and configuration items to be delivered	60
Bibliography.....		61
Figures		
Figure 5-1: Development flow (example)	17	
Figure 7-1: Design documentation.....	41	
Tables		
Table J-1 : Deliverables of the ASIC and FPGA development	60	