

DIN EN 16603-34:2014-11 (E)

Space engineering - Part 34: Environmental control and life support (ECLS); English version EN 16603-34:2014

Contents	Page
Foreword	5
1 Scope	6
2 Normative references	7
3 Terms, definitions and abbreviated terms	8
3.1 Terms from other standards.....	8
3.2 Terms specific to the present standard	8
3.3 Abbreviated terms.....	10
4 Requirements	11
4.1 Overview	11
4.2 Mission and system	11
4.2.1 General	11
4.2.2 Mission.....	11
4.2.3 System.....	12
4.3 General.....	13
4.3.1 Forms of life	13
4.3.2 ECLSS engineering.....	14
4.3.3 Environmental condition	14
4.4 Functional.....	14
4.4.1 Overview.....	14
4.4.2 Maintain environment.....	15
4.4.3 Respond to environmental contingencies.....	20
4.4.4 Provide resources	22
4.4.5 Manage waste.....	27
4.4.6 Support EVA operations.....	30
4.4.7 Provide health related services	32
4.5 Design	33
4.5.1 Overview.....	33
4.5.2 Data management control	33
4.6 Interface	34

4.6.1	General	34
4.6.2	Ground support equipment (GSE).....	34
4.6.3	Mission interfaces	34
4.7	Verification.....	36
4.7.1	General	36
4.7.2	Verification by similarity.....	37
4.7.3	Verification by inspection.....	37
4.7.4	Verification by analysis.....	37
4.8	Product assurance and safety	37
4.9	Deliverables.....	38
4.9.1	Hardware	38
4.9.2	Documentation.....	38
Annex A (informative) Parameters specification and monitoring		39
A.1	Specification of parameters	39
A.2	Monitoring of parameters	42
Annex B (informative) Reference information for parameters		43
B.1	Previous flight data	43
B.2	ISS data.....	49
B.2.1	Atmosphere.....	49
B.2.2	ECLS loads	50
B.2.3	Water quality	51
B.2.4	Radiation doses	52
Annex C (informative) References.....		54
Bibliography.....		55
Tables		
Table 4-1:	Classification of pressurized volume.....	15
Table A-1 :	List of parameters to be specified.....	39
Table A-2 :	List of parameters to be monitored.....	42
Table B-1 :	Previous flight data.....	44
Table B-2 :	American programmes - Requirements.....	45
Table B-3 :	American programmes - Functions	46
Table B-4 :	Russian programmes - Requirements.....	47
Table B-5 :	Russian programmes - Functions.....	48
Table B-6 :	Atmosphere data.....	49

Table B-7 : Metabolic loads50
Table B-8 : Water quality specifications51
Table B-9 : Current ionizing radiation equivalent dose limits.....52
Table B-10 : Organ dose limits for deterministic effects (all ages)52
Table B-11 : Current career exposure limits53