

DIN SPEC 18114:2019-04 (E)

Geographic information - Schema for coverage geometry and functions - Fundamentals; Text in English

Inhalt	Seite
Foreword	5
Introduction.....	6
1 Scope.....	7
2 Normative References.....	7
3 Terms, Definitions, Abbreviated Terms and Notation	7
3.1 Terms and Definitions	7
3.2 Abbreviated Terms	11
3.3 Notation	11
4 Conformance.....	11
4.1 Interoperability and Conformance Testing	11
4.2 Organization	12
5 Coverages.....	13
5.1 General.....	13
5.2 Coverage Terminology.....	13
5.2.1 The Coverage Structure	13
5.2.2 Features and Coverages	14
5.2.3 Probing Coverages: evaluate() Function.....	15
5.2.4 Common Point Rule	15
5.3 Coverage Modelling Variants.....	16
5.3.1 Geometry/Value Pair View.....	16
5.3.2 Domain/Range View.....	17
5.3.3 Partitioned View	17
5.3.4 Realization Independence	18
5.4 Envelope.....	18
5.5 Range Type	19
5.6 Interpolation.....	19
5.6.1 Discrete and Continuous Coverages.....	19
5.6.2 Interpolation.....	19
5.7 Multi-Dimensional Coverages	20
6 Multi-Point Coverages.....	21
7 Grid Coverages	22
7.1 Overview	22
7.2 Grids	22
7.2.1 Specification.....	22
7.2.2 Axis Types	22
7.2.3 Combinations.....	24
7.2.4 Grid Offsets.....	25
7.3 Grid Coverage	25
7.4 Rectified and Referenceable Grid Coverages	26
7.5 Further Grid Coverages	27
8 Multi-Curve Coverages.....	27
9 Multi-Surface Coverages.....	28
9.1 General Multi-Surface Coverages	28

9.2	Further Surface Coverages	29
9.2.1	General	29
9.2.2	Thiessen Polygon Coverages	29
9.2.3	Triangulated Irregular Networks (TINs).....	30
10	Multi-Solid Coverages	31
Annex A (normative) Abstract Test Suite.....		32
A.1	Requirement 1	32
A.2	Requirement 2	32
A.3	Requirement 3	32
A.4	Requirement 4	32
A.5	Requirement 5	33
A.6	Requirement 6	33
A.7	Requirement 7	33
A.8	Requirement 8	33
A.9	Requirement 9	33
A.10	Requirement 10.....	34
A.11	Requirement 11.....	34
A.12	Requirement 12.....	34
A.13	Requirement 13.....	34
A.14	Requirement 14.....	34
A.15	Requirement 15.....	34
A.16	Requirement 16.....	35
A.17	Requirement 17.....	35
A.18	Requirement 18.....	35
A.19	Requirement 19.....	35
A.20	Requirement 20.....	35
A.21	Requirement 21.....	35
A.22	Requirement 22.....	36
A.23	Requirement 23.....	36
A.24	Requirement 24.....	36
A.25	Requirement 25.....	36
A.26	Requirement 26.....	36
A.27	Requirement 27.....	36
A.28	Requirement 28.....	37
A.29	Requirement 29.....	37
A.30	Requirement 30.....	37
A.31	Requirement 31.....	37
A.32	Requirement 32.....	37
A.33	Requirement 33.....	37
A.34	Requirement 34.....	38
Annex B (informative) Interpolation.....		39
B.1	General	39
B.2	Nearest Neighbour Interpolation.....	39
B.3	Linear Interpolation.....	39
B.4	Quadratic Interpolation	39
B.5	Cubic Interpolation.....	40
B.6	Bilinear Interpolation.....	40
B.7	Biquadratic Interpolation	40
B.8	Bicubic Interpolation	40
B.9	Lost area interpolation.....	40
B.10	Barycentric interpolation.....	41
Annex C (informative) Backward Compatibility.....		42
C.1	General	42
C.2	Changes.....	42
Bibliography		43

Figures

Figure 1 — Packages of the coverage schema.....12

Figure 2 — Class CV_CommonPointRule.....16

Figure 3 — Class CV_Coverage with multiple variants17

Figure 4 — Satellite image embedded in bounding box18

Figure 5 — Class MultiPointCoverage21

Figure 6 — Class Grid23

Figure 7 — Sample 2D and 3D grids, from left to right: regular, irregular, warped nest, combination of regular Lat/Long with irregular time, combination of warped Lat/Long nest with irregular time.....25

Figure 8 — Class GridCoverage.....26

Figure 9 — Sample hexagonal grid.....27

Figure 10 — Class MultiCurveCoverage.....28

Figure 11 — Class MultiSurfaceCoverage.....29

Figure 12 — Sample Thiessen polygon coverage30

Figure 13 — Sample TIN coverage.....30

Figure 14 — Class MultiSolidCoverage.....31

Tables

Table 1 — Sources of externally defined UML classes11

Table 2 — Conformance classes12

Table 3 — Semantics of CV_CommonPointRule.....16