

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 variants	17
Figure 4 — Satellite image embedded in bounding box.....	18
Figure 5 — Class MultiPointCoverage	21
Figure 6 — Class Grid.....	23
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 coverage	30
Figure 13 — Sample TIN coverage.....	30
Figure 14 — Class MultiSolidCoverage.....	31

Tables

Table 1 — Sources of externally defined UML classes	11
Table 2 — Conformance classes	12
Table 3 — Semantics of CV_CommonPointRule.....	16