

ISO 19123-3:2023-06 (E)

Geographic information - Schema for coverage geometry and functions - Part 3: Processing fundamentals

Contents		Page
Foreword.....		v
Introduction.....		vi
1 Scope		1
2 Normative references		1
3 Terms and definitions.....		1
4 Conformance		2
4.1 Notation.....		2
4.2 Interoperability and conformance testing.....		2
4.3 Organization.....		2
5 Coverage model		2
5.1 Overview		2
5.2 Coverage model		2
5.3 Coverage identifier.....		3
5.4 Domain		4
5.4.1 Direct position		4
5.4.2 Grid		4
5.5 Interpolation		6
5.6 Range values.....		7
5.7 Range type.....		7
5.8 Coverage probing functions synopsis		7
6 Coverage processing language.....		9
6.1 Syntax and Semantics Definition Style.....		9
6.1.1 Expression Syntax.....		9
6.1.2 Expression Semantics		10
6.2 Coverage Processing Expressions.....		10
6.2.1 processCoveragesExpr.....		10
6.2.2 processingExpr.....		12
6.2.3 coverageExpr.....		12
6.2.4 coverageIdExpr		12
6.3 Coverage-Generating Expressions.....		13
6.3.1 coverageConstructorExpr.....		13
6.3.2 Examples.....		16
6.4 Coverage Extraction Expressions.....		18
6.4.1 scalarExpr.....		18
6.4.2 getComponentExpr		18
6.4.3 booleanScalarExpr		19
6.4.4 numericScalarExpr.....		19
6.4.5 stringScalarExpr		20
6.5 Coverage range value-changing expressions.....		20
6.5.1 inducedExpr.....		20
6.5.2 unaryInducedExpr		20
6.5.3 trigonometricExpr.....		23
6.5.4 binaryInducedExpr		28

6.5.5	N-ary Induced operations	30
6.5.6	Coverage Domain-Changing Expressions.....	33
6.5.7	scaleExpr.....	37
6.6	Coverage Derivation Expressions.....	38
6.6.1	crsTransformExpr	38
6.7	Coverage Aggregation Expressions	39
6.7.1	condenseExpr	39
6.7.2	generalCondenseExpr	39
6.7.3	reduceExpr	42
6.8	Coverage Encode/Decode Expressions	43
6.8.1	encodeCoverageExpr	43
6.8.2	decodeCoverageExpr	44
6.9	Expression evaluation.....	45
6.9.1	Evaluation sequence	45
6.9.2	Nesting	45
6.9.3	Parentheses.....	45
6.9.4	Operator precedence rules.....	45
6.9.5	Range type compatibility and extension	46
6.10	Evaluation response.....	46
Annex A (normative) Conformance Tests.....		48
Annex B (normative) Expression Syntax		49
Annex C (informative) Syntax diagrams		57
Annex D (informative) Sample service descriptions.....		74
Bibliography.....		77