

DIN EN ISO 19123-3:2024-02 (E)

Geographic information - Schema for coverage geometry and functions - Part 3:
Processing fundamentals (ISO 19123-3:2023, Corrected version 2023-11); English
version EN ISO 19123-3:2023

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