

DIN EN ISO 19144-2:2024-09 (E)

Geographic information - Classification systems - Part 2: Land Cover Meta Language (LCML) (ISO 19144-2:2023); English version EN ISO 19144-2:2023

Contents		Page
	Foreword.....	vi
	Introduction.....	viii
1	Scope	1
2	Normative references	1
3	Terms, definitions and abbreviated terms	1
	3.1 Terms and definitions.....	1
	3.2 Abbreviated terms.....	4
4	Conformance	4
	4.1 Conformance requirements and testing.....	4
	4.2 Conformance classes.....	4
	4.3 Conformance class 1 — Description of a Land Cover classification system.....	4
	4.4 Conformance class 2 — Comparison of Land Cover classification systems.....	4
5	Notation	4
6	Context	5
7	Conceptual basis	7
	7.1 Definition adopted for Land Cover.....	7
	7.2 Geometric aspects of classification.....	7
	7.3 Relationship to Land Use.....	8
	7.4 LCML approach to class definition.....	8
	7.4.1 LCML basic principle.....	8
	7.4.2 Land cover classification system design criteria.....	8
	7.4.3 General rules for classification.....	9
	7.4.4 Land cover metalanguage-elements.....	9
	7.4.5 Layering.....	9
	7.4.6 Packages.....	9
8	LCML objects	10
	8.1 Overview of LCML objects.....	10
	8.2 Relation to ISO 19144-1.....	11
	8.3 Composition of a LC_LandCover object.....	11
	8.4 Elements of the LCML metamodel.....	12
	8.5 High level structure.....	12
	8.5.1 High level structure subtypes.....	12
	8.5.2 High level structure classes.....	12
	8.6 Land Cover Meta Language object structure.....	13
	8.6.1 Land Cover Meta Language object structure subtypes.....	13
	8.6.2 Land Cover Meta Language object structure classes.....	16
	8.7 LC_Element.....	24
	8.7.1 LC_Element subtypes.....	24
	8.7.2 LC_Element classes.....	25
	8.8 LC_VegetationElement.....	25
	8.8.1 LC_VegetationElement subtypes.....	25
	8.8.2 LC_VegetationElement classes.....	25
	8.9 LC_GrowthForm.....	26
	8.9.1 LC_GrowthForm subtypes.....	26
	8.9.2 LC_GrowthForm classes.....	27
	8.10 LC_WoodyGrowthForm.....	28
	8.10.1 LC_WoodyGrowthForm subtypes.....	28
	8.10.2 LC_WoodyGrowthForm classes.....	29
	8.11 LC_HerbaceousGrowthForm.....	32
	8.11.1 LC_HerbaceousGrowthForm subtypes.....	32
	8.11.2 LC_HerbaceousGrowthForm classes.....	32

8.12	LC_LichenAndMoss	34
8.12.1	LC_LichenAndMoss subtypes	34
8.12.2	LC_LichenAndMoss classes	34
8.13	LC_AbioticElement	35
8.13.1	LC_AbioticElement subtypes	35
8.13.2	LC_AbioticElement classes	35
8.14	LC_ArtificialSurfaceElement	36
8.14.1	LC_ArtificialSurfaceElement subtypes	36
8.14.2	LC_ArtificialSurface classes	36
8.15	LC_NaturalSurfaceElement	36
8.15.1	LC_NaturalSurfaceElement subtypes	36
8.15.2	LC_NaturalSurfaceElement classes	37
8.16	LC_WaterBodyAndAssociatedSurfaceElement	37
8.16.1	LC_WaterBodyAndAssociatedSurfaceElement subtypes	37
8.16.2	LC_WaterBodyAndAssociatedSurfaceElement classes	38
8.17	LC_BuiltUpSurface	41
8.17.1	LC_BuiltUpSurface subtypes	41
8.17.2	LC_BuiltUpSurface classes	42
8.18	LC_NonBuiltUpSurface	43
8.18.1	LC_NonBuiltUpSurface subtypes	43
8.18.2	LC_NonBuiltUpSurface classes	44
8.19	LC_RocksSurfaceElement	45
8.19.1	LC_RocksSurface subtypes	45
8.19.2	LC_RocksSurfaceElement classes	45
8.20	LC_SoilSandDepositsSurfaceElement	46
8.20.1	LC_SoilSandDepositsSurfaceElement subtypes	46
8.20.2	LC_SoilSandDepositsSurfaceElement classes	47
8.21	LC_ClassCharacteristic	50
8.21.1	LC_ClassCharacteristic subtypes	50
8.21.2	LC_ClassCharacteristic classes	51
8.22	LC_LandCoverElementCharacteristic	53
8.22.1	LC_LandCoverElementCharacteristic subtypes	53
8.22.2	LC_LandCoverElementCharacteristic classes	54
8.23	LC_GrowthFormCharacteristic	55
8.23.1	LC_GrowthFormCharacteristic subtypes	55
8.23.2	LC_GrowthFormCharacteristic classes	57
8.24	LC_NameAttributionCriteria	59
8.24.1	LC_NameAttributionCriteria subtypes	59
8.24.2	LC_NameAttributionCriteria classes	60
8.25	LC_CultivatedAndManagedVegetationCharacteristic	61
8.25.1	LC_CultivatedAndManagedVegetationCharacteristic subtypes	61
8.25.2	LC_CultivatedAndManagedVegetationCharacteristic classes	62
8.26	LC_ArtificialSurfaceCharacteristic	65
8.26.1	LC_ArtificialSurfaceCharacteristic subtypes	65
8.26.2	LC_ArtificialSurfaceCharacteristic classes	66
8.27	LC_WaterAndAssociatedSurfaceCharacteristic	67
8.27.1	LC_WaterAndAssociatedSurfaceCharacteristic subtypes	67
8.27.2	LC_WaterAndAssociatedSurfaceCharacteristic classes	68
8.28	LC_ValueObject permitted numeric values	69
8.28.1	LC_ValueObject general description	69
8.28.2	LC_ValueObject types	71
9	Extension of the LCML	74
9.1	Extension process	74
9.2	Registration of extensions	74
9.3	Backward compatibility through registration	75
	Annex A (normative) Abstract test suite	76

Annex B (informative) The relationship of the LCML to the General Feature Model of ISO 19109	78
Annex C (informative) Examples of the use of LCML.....	81
Annex D (informative) Glossary of Land Cover meta-elements	112
Annex E (informative) Backward compatibility.....	131
Annex F (informative) The vertical and horizontal characterization of Land Cover features.....	134
Bibliography.....	144