

ISO/TS 19101-2:2008-06 (E)

Geographic information - Reference model - Part 2: Imagery

Contents		Page
Foreword		v
Introduction		vi
1	Scope	1
2	Conformance	1
2.1	General	1
2.2	Enterprise conformance	1
2.3	Sensor conformance	1
2.4	Imagery data conformance	1
2.5	Imagery services conformance	1
2.6	Image processing system conformance	1
3	Normative references	2
4	Terms and definitions	2
5	Abbreviated terms and symbols	7
5.1	Abbreviated terms	7
5.2	Symbols	9
6	Notation	10
7	Enterprise Viewpoint - community objectives and policies	10
7.1	General	10
7.2	Geographic imagery community objective	10
7.3	Geographic imagery scenario	10
7.4	Geographic imagery policies	11
7.4.1	Introduction to policies	11
7.4.2	Policy development guidelines	12
7.4.3	Policies	12
8	Information Viewpoint - knowledge based decisions	13
8.1	Introduction to Information Viewpoint	13
8.1.1	Introduction to types of geographic imagery	13
8.1.2	Creating knowledge from imagery	14
8.1.3	General Feature Model	16
8.1.4	Topics relevant across data, information, and knowledge	17
8.2	Sensor data package	18
8.2.1	General	18
8.2.2	Sensors and platforms	18
8.2.3	Optical sensing	19
8.2.4	Microwave sensing	21
8.2.5	LIDAR sensor	24
8.2.6	Sonar sensor	27
8.2.7	Digital images from film	28
8.2.8	Scanned maps	28
8.2.9	Calibration, validation and metrology	28
8.2.10	Position and attitude determination	29
8.2.11	Image acquisition request	30
8.3	Geographic imagery information - processed, located, gridded	30

8.3.1	General	30
8.3.2	IG_Scene	30
8.3.3	Derived imagery	34
8.3.4	Imagery metadata	37
8.3.5	Encoding rules for imagery	38
8.3.6	Imagery compression	39
8.4	Geographic imagery knowledge - inference and interpretation	40
8.4.1	General	40
8.4.2	Knowledge from imagery	40
8.4.3	Image understanding and classification	40
8.4.4	IG_KnowledgeBase	42
8.5	Geographic imagery decision support - context-specific applications	44
8.5.1	General	44
8.5.2	Decision support services	44
8.5.3	Geographic portrayal	45
8.5.4	Fitness for Use Context	48
8.5.5	Decision fusion	50
9	Computational Viewpoint - services for imagery	50
9.1	Task-oriented computation	50
9.2	Computational patterns	50
9.3	Geographic imagery services	52
9.4	Service chaining for imagery	53
9.5	Service metadata	53
10	Engineering Viewpoint - deployment approaches	54
10.1	General	54
10.2	Distributed system for geographic imagery	54
10.3	Imagery Collection Node	55
10.4	Sensor Processing Node	56
10.5	Imagery Archive Node	57
10.6	Value Added Processing Node	58
10.7	Decision Support Node	59
10.8	Channels: networks and DCPs	60
10.8.1	Imagery considerations for channels	60
10.8.2	Space to ground communications	60
Annex A (normative)	Abstract test suite	61
Annex B (informative)	ISO Reference Model for Open Distributed Processing (RM-ODP)	63
Annex C (informative)	Imagery use cases	64
Annex D (informative)	Principles relating to remote sensing of the Earth from space	68
Bibliography	71