ISO 19168-1:2025-01 (E)

Geographic information - Geospatial API for features - Part 1: Core

Contents

Page

Foreword v

Introduction vii

1 Scope 1

2 Normative references 1

3 Termsanddefinitions 2
3.1 Terms and definitions 2
3.2 Abbreviated terms 3

4 Conformance 3

5 Conventions 4
5.1 Identifiers 4
5.2 Link relations 4
5.3 Use of HTTPS 5
5.4 HTTP URIs 5
5.5 API definition 5
5.5.1 General remarks 5
5.5.2 Role of OpenAPI 5
5.5.3 References to OpenAPI components in normative statements 6
5.5.4 Paths in OpenAPI definitions 6
5.5.5 Reusable OpenAPI components 6

6 Overview 7
6.1 Design considerations 7
6.2 Encodings 7
6.3 Examples 8

7 Requirements class "Core" 9
7.1 Overview 9
7.2 API landing page 10
7.2.1 Operation 10
7.2.2 Response 10
7.2.3 Error situations 11
7.3 API definition 11
7.3.1 Operation 11
7.3.2 Response 12
7.3.3 Error situations 12
7.4 Declaration of conformance classes 12
7.4.1 Operation 12
7.4.2 Response 13
7.4.3 Error situations 13
7.5 HTTP 1.1 13
7.5.1 HTTP status codes 13
7.6 Unknown or invalid query parameters 14
7.7 Web caching 15
7.8 Support for cross-origin requests 15
7.9 Encodings 15
7.10 String internationalization 16

7.11 Coordinate reference systems ... 16
7.12 Link headers ... 17
7.13 Feature collections ... 17
7.13.1 Operation ... 17
7.13.2 Response ... 17
7.13.3 Error situations ... 23
7.14 Feature collection ... 24
7.14.1 Operation ... 24
7.14.2 Response ... 24
7.14.3 Error situations ... 24
7.15 Features ... 24
7.15.1 Operation ... 24
7.15.2 Parameter limit ... 25
7.15.3 Parameter bbox ... 26
7.15.4 Parameter datetime ... 27
7.15.5 Parameters for filtering on feature properties ... 29
7.15.6 Combinations of filter parameters ... 29
7.15.7 Response ... 30
7.15.8 Error situations ... 32
7.16 Feature ... 32
7.16.1 Operation ... 32
7.16.2 Response ... 33
7.16.3 Error situations ... 33

8 Requirements classes for encodings ... 33
8.1 Overview ... 33
8.2 Requirements class "HTML" ... 34
8.3 Requirements class "GeoJSON" ... 34
8.4 Requirements class "Geography Markup Language (GML), Simple Features Profile, Level 0" ... 36
8.5 Requirements class "Geography Markup Language (GML), Simple Features Profile, Level 2" ... 38

9 Requirements class "OpenAPI 3.0" ... 39
9.1 Basic requirements ... 39
9.2 Complete definition ... 40
9.3 Exceptions ... 40
9.4 Security ... 40
9.5 Features ... 40

10 Media types ... 41

11 Security Considerations ... 41
11.1 General ... 41
11.2 Multiple access routes ... 42
11.3 Multiple servers ... 42
11.4 Path manipulation on GET ... 42
11.5 Path manipulation on PUT and POST ... 42

Annex A (normative) Abstract test suite ... 43

Bibliography ... 59