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TITLE:	**OGC Web Services Summaries**
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1.Introduction

This document provides brief and consistent summaries of several OGC Web Service interface specifications that serve data.

NOTE Previous brief summaries of OGC Web Service interface specifications have used a variety of formats to include a wide variety of information.

2.References

[1] OGC 04-094, Web Feature Service Implementation Specification, v1.1.0

[2] OGC 06-042, Geographic information — Web Map Service interface, v1.3.0

[3] OGC 07-006r1, OpenGIS® Catalogue Services Specification, v2.0.2

[4] OGC 07-067r2, Web Coverage Service Implementation Specification, v1.1.1

3.Definitions

Table 1 — Definitions of terms used

access	A client can ask for and receive data structures available from a server.
available from	Indefinite number of distinct data structures currently accessible from a server. These data structures may be stored by the server, created on-the-fly by the server, and/or accessed by the server from a separate service of the same or different type.
CRS	Coordinate reference system of positions in data
identifier	Unique identifier of a data structure or a part thereof. Identifier may or may not be human understandable (indicating semantic meaning)
parts	Partial data from a data structure returned from server as selected by the client
set	Zero or more instances of a data structure that meet selection criteria

4.Summaries

Table 2 — Overview of Web Map Service (WMS)

Primary function	The WMS GetMap operation allows clients to access part of identified layers available from a server.
Data served	Layer: A (grid or feature) coverage as defined in ISO 19123 that is portrayed for display and is output as an “image map” in an image format. A feature coverage is usually a feature collection. A grid coverage must be continuous (interpolatable), not discrete (not interpolatable).
Data selected by	Layer identifier(s). Normally select one or a few layers. Note: This use of identifiers effectively limits a server to less than 1000 layers available, with less than 100 changes per day.
Selectable parts	Part of spatial-temporal domain of identified layer coverage, currently limited to horizontal 2D slice of domain, selected using a bounding box
Selectable processing	1. Transform CRS of selected layer part, including scale change 2. Select identified portrayal “style” for each layer, from list or using SLD input 3. Convert portrayal of layer part to selected image encoding format
Other functions	1. GetCapabilities operation (mandatory): Allows clients to get WMS server metadata, including list of layers available with styles and other metadata for each layer 2. GetFeatureInfo operation (optional): Allows clients to get more information about a pixel position in “image map” layer and style

Table 3 — Overview of Web Coverage Service (WCS)

Primary function	The WCS GetCoverage operation allows clients to access part of identified grid coverage offered by a server.
Data served	Grid coverage: A quadrilateral grid coverage as defined in ISO 19123. In WCS, primarily continuous (interpolatable) grid coverages, but could be discrete (not interpolatable). Output pixels usually encoded in a binary image format; output includes coverage metadata.
Data selected by	Coverage identifier. Currently selects one coverage. Note: Unless a catalogue is referenced by WCS Contents section instead listing the coverages available, this use of identifiers effectively limits a server less to than 1000 coverages offered, with less than 100 changes per day.
Selectable parts	1. Part of spatial-temporal domain of identified grid coverage, selected using a BoundingBox 2. Part of range of values of grid coverage, selected using identifiers
Selectable processing	1. Transform CRS of selected grid coverage part, including scale change, image georectification, or image orthorectification when requested 2. Convert selected coverage part to selected grid coverage encoding format
Other functions	1. GetCapabilities operation (mandatory): Allows clients to get WCS server metadata, including optional list of offered coverages with some metadata about each coverage 2. DescribeCoverage operation (mandatory): Allows clients to get more metadata about identified offered grid coverage(s), including coverage range details 3. Transaction operation (future optional): Allows clients to add, modify, and delete current grid coverages

Table 4 — Overview of Web Feature Service (WFS)

Primary function	The WFS GetFeature operation allows clients to access the set of features available from a server that all have client-desired property values.
Data served	Feature: A single feature or feature collection that may include other feature collections, with output features encoded in GML or other formats. Most features have geometry properties specifying spatial positions.
Data selected by	Feature property values, including spatial positions in geometry properties. May select zero or many features. Often uses a BoundingBox to select features with desired geometry properties. Note: Since data not selected by identifiers, is no practical limit on number of features available from a server.
Selectable parts	Feature geometry and other properties, selected using identifiers, may return all properties
Selectable processing	1. Transform CRS of geometries of selected features 2. Convert selected features to selected feature encoding format 3. Follow Xlinks in features
Other functions	1. GetCapabilities operation (mandatory): Allows clients to get WFS server metadata, including lists of feature types, GML object types, and filter capabilities implemented 2. DescribeFeatureType operation (mandatory): Allows clients to get descriptive metadata about one or more feature types handled by server 3. GetGmlObject operation (optional): Allows clients to get identified feature or other GML object 4. Transaction operation (optional): Allows clients to add, modify, and delete current features. 5. Lockfeature operation (optional): Allows clients to lock a set of features, to temporarily prevent modification or deletion of those features

Table 5 — Overview of Catalogue Service for the Web (CSW)

Primary function	The CSW GetRecords operation allows clients to access the set of metadata records available from a server that all have client-desired parameter values.
Data served	Metadata record: A set of parameters describing a geospatial resource, which may be a data set, service, and any other information. These metadata records are usually encoded in XML.
Data selected by	Metadata parameter values, including spatial positions in geometry parameters. May select zero or many metadata records. Often uses a BoundingBox to select metadata records with desired position parameters. Note: Since data not selected by identifiers, is no practical limit on number of metadata records available from a server.
Selectable parts	Metadata record position and other parameters, selected using identifiers, may return all parameters
Selectable processing	None
Other functions	1. GetCapabilities operation (mandatory): Allows clients to get CSW server metadata, including lists of resource types catalogued and filter capabilities implemented 2. DescribeRecord operation (required): Allows clients to access information model supported by specific catalogue server 3. GetRecordById operation (required): Allows clients to access metadata records by their identifiers 4. GetDomain operation (optional): Allows clients to access current domain of identified metadata record parameters 5. Transaction operation (optional): Allows clients to add, modify, and delete current metadata records, by sending the desired changes 6. Harvest operation (optional): Allows clients to request a server to retrieve new and modified metadata records from a network location

