

# Package ‘ows4R’

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**Title** Interface to OGC Web-Services (OWS)

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**Imports** methods, R6, httr, openssl, keyring, XML (>= 3.96-1.1),  
geometa (>= 0.7-1), sf, terra, parallel

**Suggests** testthat, knitr, markdown

**Description** Provides an Interface to Web-Services defined as standards by the Open Geospatial Consortium (OGC), including Web Feature Service (WFS) for vector data, Web Coverage Service (WCS), Catalogue Service (CSW) for ISO/OGC metadata, Web Processing Service (WPS) for data processes, and associated standards such as the common web-service specification (OWS) and OGC Filter Encoding. Partial support is provided for the Web Map Service (WMS). The purpose is to add support for additional OGC service standards such as Web Coverage Processing Service (WCPS), the Sensor Observation Service (SOS), or even new standard services emerging such OGC API or SensorThings.

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**URL** <https://github.com/eblondel/ows4R>,  
<https://eblondel.github.io/ows4R/>,  
<https://www.ogc.org/standards>

**BugReports** <https://github.com/eblondel/ows4R/issues>

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And	<i>And</i>
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### Description

And

And

### Format

[R6Class](#) object.

### Value

Object of [R6Class](#) for modelling an And operator

### Super classes

[ows4R::OGCAbstractObject](#) -> [ows4R::OGCExpression](#) -> [ows4R::BinaryLogicOpType](#) -> And

### Methods

#### Public methods:

- [And\\$new\(\)](#)
- [And\\$clone\(\)](#)

**Method** `new()`: Initializes an [And](#) expression

*Usage:*

`And$new(...)`

*Arguments:*

... list of objects of class [OGCExpression](#)

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

`And$clone(deep = FALSE)`

*Arguments:*

`deep` Whether to make a deep clone.

**Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

**Examples**

```
expr1 <- PropertyIsEqualTo$new(PropertyName = "property1", Literal = "value1")
expr2 <- PropertyIsEqualTo$new(PropertyName = "property2", Literal = "value2")
and <- And$new(expr1,expr2)
and_xml <- and$encode() #see how it looks like in XML
```

---

BBOX

*BBOX*

---

**Description**

BBOX

BBOX

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) for modelling an BBOX

**Super classes**

[ows4R::OGCAbstractObject](#) -> [ows4R::OGCExpression](#) -> BBOX

**Public fields**

PropertyName property name field for XML encoding

Envelope envelope as object of class [GMLEnvelope](#) from **geometa**

**Methods****Public methods:**

- [BBOX\\$new\(\)](#)
- [BBOX\\$clone\(\)](#)

**Method** `new()`: Initializes a [BBOX](#) expression

*Usage:*

```
BBOX$new(bbox, srsName = NULL)
```

*Arguments:*

bbox an object of class matrix  
 srsName srs name

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

```
BBOX$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

### Author(s)

Emmanuel Blondel <emmanuel.blondell@gmail.com>

### Examples

```
bbox <- OWSUtils$toBBOX(-180,-90,180,90)
expr <- BBOX$new(bbox)
expr_xml <- expr$encode() #see how it looks like in XML
```

---

BinaryComparisonOpType

*BinaryComparisonOpType*

---

### Description

BinaryComparisonOpType  
 BinaryComparisonOpType

### Format

[R6Class](#) object.

### Value

Object of [R6Class](#) for modelling an BinaryComparisonOpType

### Super classes

[ows4R::OGCAbstractObject](#) -> [ows4R::OGCEXpression](#) -> BinaryComparisonOpType

### Public fields

PropertyName property name field for XML encoding  
 Literal literal field for XML encoding  
 attrs attributes for XML encoding

**Methods****Public methods:**

- [BinaryComparisonOpType\\$new\(\)](#)
- [BinaryComparisonOpType\\$clone\(\)](#)

**Method** `new()`: Initializes an object extending [BinaryComparisonOpType](#)

*Usage:*

```
BinaryComparisonOpType$new(  
  element,  
  namespacePrefix,  
  propertyName,  
  literal,  
  matchCase = NA  
)
```

*Arguments:*

element element name  
namespacePrefix XML namespace prefix  
propertyName property name  
literal literal  
matchCase match case

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

```
BinaryComparisonOpType$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

**Note**

abstract super class of all the property operation classes

**Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

BinaryLogicOpType

*BinaryLogicOpType*

---

**Description**

BinaryLogicOpType

BinaryLogicOpType

**Format**

R6Class object.

**Value**

Object of R6Class for modelling an BinaryLogicOpType

**Super classes**

ows4R::OGCAbstractObject -> ows4R::OGCEXpression -> BinaryLogicOpType

**Public fields**

operations a list OGC expressions

**Methods****Public methods:**

- BinaryLogicOpType\$new()
- BinaryLogicOpType\$setExprVersion()
- BinaryLogicOpType\$clone()

**Method** new(): Initializes a BinaryLogicOpType expression

*Usage:*

```
BinaryLogicOpType$new(..., element, namespacePrefix, exprVersion = "1.1.0")
```

*Arguments:*

... list of objects of class OGCEXpression

element element

namespacePrefix namespacePrefix

exprVersion OGC expression version. Default is "1.1.0"

**Method** setExprVersion(): Sets expression version. The methods will control that expression versions are set for each of the operations specified in the expression.

*Usage:*

```
BinaryLogicOpType$setExprVersion(exprVersion)
```

*Arguments:*

exprVersion OGC expression version

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

```
BinaryLogicOpType$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

**Note**

abstract super class of all the binary logical operation classes



---

CASClient

*CASClient*

---

### Description

CASClient

CASClient

### Format

[R6Class](#) object.

### Value

Object of [R6Class](#) with methods for interfacing a Central Authentication Service (CAS).

### Methods

#### Public methods:

- [CASClient\\$new\(\)](#)
- [CASClient\\$getUrl\(\)](#)
- [CASClient\\$login\(\)](#)
- [CASClient\\$logout\(\)](#)
- [CASClient\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes an object of class [CASClient](#)

*Usage:*

`CASClient$new(url)`

*Arguments:*

url base URL of the Central Authentication Service (CAS)

**Method** [getUrl\(\)](#): Get CAS base URL

*Usage:*

`CASClient$getUrl()`

*Returns:* the base URL

**Method** [login\(\)](#): Logs in the CAS

*Usage:*

`CASClient$login(user, pwd)`

*Arguments:*

user user

pwd password

*Returns:* TRUE if logged in, FALSE otherwise

**Method** `logout()`: Logs out from the CAS

*Usage:*

`CASClient$logout()`

*Returns:* TRUE if logged out, FALSE otherwise

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

`CASClient$clone(deep = FALSE)`

*Arguments:*

`deep` Whether to make a deep clone.

### Note

Class used internally by **ows4R**

### Author(s)

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

CSWCapabilities

*CSWCapabilities*

---

### Description

CSWCapabilities

CSWCapabilities

### Format

[R6Class](#) object.

### Value

Object of [R6Class](#) with methods for interfacing an OGC Catalogue Service for the Web (CSW) Get Capabilities document.

### Super classes

[ows4R::OGCAbstractObject](#) -> [ows4R::OWSCapabilities](#) -> CSWCapabilities

**Methods****Public methods:**

- [CSWCapabilities\\$new\(\)](#)
- [CSWCapabilities\\$clone\(\)](#)

**Method** `new()`: Initializes a [CSWCapabilities](#) object

*Usage:*

```
CSWCapabilities$new(url, version, client = NULL, logger = NULL, ...)
```

*Arguments:*

`url` url

`version` version

`client` object of class [CSWClient](#)

`logger` logger type NULL, "INFO" or "DEBUG"

... any other parameter to pass to [OWSGetCapabilities](#) service request

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

```
CSWCapabilities$clone(deep = FALSE)
```

*Arguments:*

`deep` Whether to make a deep clone.

**Note**

Class used to read a [CSWCapabilities](#) document. The use of [CSWClient](#) is recommended instead to benefit from the full set of capabilities associated to a CSW server.

**Author(s)**

Emmanuel Blondel <emmanuel.blondell@gmail.com>

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CSWClient

*CSWClient*

---

**Description**

CSWClient

CSWClient

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) with methods for interfacing an OGC Catalogue Service for the Web.

**Super classes**

ows4R::OGCAbstractObject -> ows4R::OWSClient -> CSWClient

**Methods****Public methods:**

- CSWClient\$new()
- CSWClient\$getCapabilities()
- CSWClient\$reloadCapabilities()
- CSWClient\$describeRecord()
- CSWClient\$getRecordById()
- CSWClient\$getRecords()
- CSWClient\$transaction()
- CSWClient\$insertRecord()
- CSWClient\$updateRecord()
- CSWClient\$deleteRecord()
- CSWClient\$deleteRecordById()
- CSWClient\$harvestRecord()
- CSWClient\$harvestNode()
- CSWClient\$clone()

**Method new():** This method is used to instantiate a CSWClient with the url of the OGC service. Authentication is supported using basic auth (using user/pwd arguments), bearer token (using token argument), or custom (using headers argument). By default, the logger argument will be set to NULL (no logger). This argument accepts two possible values: INFO: to print only **ows4R** logs, DEBUG: to print more verbose logs

*Usage:*

```
CSWClient$new(
  url,
  serviceVersion = NULL,
  user = NULL,
  pwd = NULL,
  token = NULL,
  headers = c(),
  config = httr::config(),
  cas_url = NULL,
  logger = NULL
)
```

*Arguments:*

```
url url
serviceVersion CSW service version
user user
pwd password
token token
```

headers headers  
config config  
cas\_url Central Authentication Service (CAS) URL  
logger logger

**Method** getCapabilities(): Get CSW capabilities

*Usage:*

CSWClient\$getCapabilities()

*Returns:* an object of class [CSWCapabilities](#)

**Method** reloadCapabilities(): Reloads CSW capabilities

*Usage:*

CSWClient\$reloadCapabilities()

**Method** describeRecord(): Describe records. Retrieves the XML schema for CSW records. By default, returns the XML schema for the CSW records (<http://www.opengis.net/cat/csw/2.0.2>). For other schemas, specify the outputSchema required, e.g. <http://www.isotc211.org/2005/gmd> for ISO 19115/19139 schema

*Usage:*

CSWClient\$describeRecord(namespace, ...)

*Arguments:*

namespace namespace

... any other parameter to pass to the [CSWDescribeRecord](#) service request

*Returns:* the service record description

**Method** getRecordById(): Get a record by Id. By default, the record will be returned following the CSW schema (<http://www.opengis.net/cat/csw/2.0.2>). For other schemas, specify the outputSchema required, e.g. <http://www.isotc211.org/2005/gmd> for ISO 19115/19139 records. The parameter elementSetName should among values "full", "brief", "summary". The default "full" corresponds to the full metadata sheet returned. "brief" and "summary" will contain only a subset of the metadata content.

*Usage:*

CSWClient\$getRecordById(id, elementSetName = "full", ...)

*Arguments:*

id record id

elementSetName element set name. Default is "full"

... any other parameter to pass to [CSWGetRecordById](#) service request

*Returns:* the fetched record, NULL otherwise

**Method** getRecords(): Get records based on a query, object of class CSWQuery. The maximum number of records can be set either for the full query (maxRecords) or per request (maxRecordsPerRequest, default set to 10 records) considering this operation is paginated. By default, the record will be returned following the CSW schema (<http://www.opengis.net/cat/csw/2.0.2>). For other schemas, specify the outputSchema required, e.g. <http://www.isotc211.org/2005/gmd> for ISO 19115/19139 records.

*Usage:*

```
CSWClient$getRecords(
  query = CSWQuery$new(),
  maxRecords = NULL,
  maxRecordsPerRequest = 10L,
  ...
)
```

*Arguments:*

*query* an object of class [CSWQuery](#). By default, an empty query is set.  
*maxRecords* max number of total records. Default is NULL meaning all records are returned.  
*maxRecordsPerRequest* max number of records to return per request. Default set to 10.  
 ... any other parameter to be passed to [CSWGetRecords](#) service request

*Returns:* the list of records. By default each record will be returned as Dublin Core list object. In case ISO 19115/19139 is set as outputSchema, each record will be object of class ISOMetadata from **geometa**.

**Method** `transaction()`: Generic transaction method. Used for inserting, updating or deleting metadata using the transactional CSW service. The type gives the type of transaction (Insert, Update, or Delete). The record

*Usage:*

```
CSWClient$transaction(
  type,
  record = NULL,
  recordProperty = NULL,
  constraint = NULL,
  ...
)
```

*Arguments:*

*type* of transaction either "Insert", "Update" or "Delete"  
*record* the record subject of the transaction  
*recordProperty* record property, object of class [CSWRecordProperty](#)  
*constraint* constraint, object of class [CSWConstraint](#)  
 ... any other parameter to pass to [CSWTransaction](#) service request

*Returns:* TRUE if transaction succeeded, FALSE otherwise

**Method** `insertRecord()`: Inserts a new record

*Usage:*

```
CSWClient$insertRecord(record, ...)
```

*Arguments:*

*record* record subject of the Insertion  
 ... any other parameter to pass to the transaction

*Returns:* TRUE if insertion succeeded, FALSE otherwise

**Method** `updateRecord()`: Updates an existing record

*Usage:*

```
CSWClient$updateRecord(
  record = NULL,
  recordProperty = NULL,
  constraint = NULL,
  ...
)
```

*Arguments:*

record record subject of the Insertion  
 recordProperty record property, object of class [CSWRecordProperty](#)  
 constraint constraint, object of class [CSWConstraint](#)  
 ... any other parameter to pass to the transaction

*Returns:* TRUE if update succeeded, FALSE otherwise

**Method deleteRecord():** Deletes an existing (set of) record(s). A constraint (object of class [CSWConstraint](#)) can be specified to limit the deletion to some records.

*Usage:*

```
CSWClient$deleteRecord(record = NULL, constraint = NULL, ...)
```

*Arguments:*

record record subject of the Insertion  
 constraint constraint, object of class [CSWConstraint](#)  
 ... any other parameter to pass to the transaction

*Returns:* TRUE if deletion succeeded, FALSE otherwise

**Method deleteRecordById():** Deletes an existing record by identifier (constraint used to identify the record based on its identifier).

*Usage:*

```
CSWClient$deleteRecordById(id)
```

*Arguments:*

id record id

*Returns:* TRUE if deletion succeeded, FALSE otherwise

**Method harvestRecord():** Harvests a single record from a sourceUrl, given a resourceType (by default "http://www.isotc211.org/2005/gmd").

*Usage:*

```
CSWClient$harvestRecord(
  sourceUrl,
  resourceType = "http://www.isotc211.org/2005/gmd"
)
```

*Arguments:*

sourceUrl source URL  
 resourceType resource type. Default is "http://www.isotc211.org/2005/gmd"

*Returns:* TRUE if harvesting succeeded, FALSE otherwise

**Method** harvestNode(): Harvests a CSW node (having its endpoint defined by an url). A query (object of class CSWQuery) can be specified if needed to restrain the harvesting to a subset. The resourceType defines the type of resources to be harvested (by default "http://www.isotc211.org/2005/gmd")

*Usage:*

```
CSWClient$harvestNode(
  url,
  query = CSWQuery$new(),
  resourceType = "http://www.isotc211.org/2005/gmd",
  sourceBaseUrl
)
```

*Arguments:*

url CSW node URL

query a CSW query, object of class [CSWQuery](#)

resourceType resource type. Default is "http://www.isotc211.org/2005/gmd"

sourceBaseUrl source base URL

*Returns:* an object of class list giving the number of records found and those actually harvested

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

```
CSWClient$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

### Author(s)

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

### Examples

```
## Not run:
#example based on CSW endpoint responding at http://localhost:8000/csw
csw <- CSWClient$new("http://localhost:8000/csw", serviceVersion = "2.0.2")

#get capabilities
caps <- csw$getCapabilities()

#get records
records <- csw$getRecords()

#get record by id
record <- csw$getRecordById("my-metadata-id")

#Advanced examples at https://github.com/eblondel/ows4R/wiki#csw

## End(Not run)
```



---

CSWConstraint	<i>CSWConstraint</i>
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---

**Description**

CSWConstraint

CSWConstraint

**Format**[R6Class](#) object.**Value**Object of [R6Class](#) for modelling an CSW Constraint**Super class**[ows4R::OGCAbstractObject](#) -> CSWConstraint**Public fields**

wrap internal property for object XML encoding

CqlText text to use as CQL filter

filter

**Methods****Public methods:**

- [CSWConstraint\\$new\(\)](#)
- [CSWConstraint\\$setServiceVersion\(\)](#)
- [CSWConstraint\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes a [CSWConstraint](#) object to be used to constrain CSW operations.*Usage:*`CSWConstraint$new(cqlText = NULL, filter = NULL, serviceVersion = "2.0.2")`*Arguments:*

cqlText cqlText, object of class character

filter filter, object extending [OGCFilter](#)

serviceVersion CSW service version. Default is "2.0.2"

**Method** [setServiceVersion\(\)](#): Set service version. This methods ensures that underlying filter property is properly set with the right OGC filter version.*Usage:*`CSWConstraint$setServiceVersion(serviceVersion)`

*Arguments:*

serviceVersion service version

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

```
CSWConstraint$new(clone(deep = FALSE))
```

*Arguments:*

deep Whether to make a deep clone.

**Author(s)**

Emmanuel Blondel <emmanuel.blondell@gmail.com>

**Examples**

```
filter <- OGCFilter$new( PropertyIsEqualTo$new("apiso:Identifier", "12345") )
cons <- CSWConstraint$new(filter = filter)
cons_xml <- cons$encode() #how it looks like in XML
```

---

CSWDescribeRecord	<i>CSWDescribeRecord</i>
-------------------	--------------------------

---

**Description**

CSWDescribeRecord

CSWDescribeRecord

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) for modelling a CSW DescribeRecord request

**Super classes**

[ows4R::OGCAbstractObject](#) -> [ows4R::OWSHttpRequest](#) -> CSWDescribeRecord

**Methods****Public methods:**

- [CSWDescribeRecord\\$new\(\)](#)
- [CSWDescribeRecord\\$clone\(\)](#)

**Method** `new()`: Initializes a [CSWDescribeRecord](#) service request

*Usage:*

```
CSWDescribeRecord$new(
  capabilities,
  op,
  url,
  version,
  namespace = NULL,
  user = NULL,
  pwd = NULL,
  token = NULL,
  headers = c(),
  config = httr::config(),
  logger = NULL,
  ...
)
```

*Arguments:*

`capabilities` an object of class [CSWCapabilities](#)  
`op` object of class [OWSOperation](#) as retrieved from `capabilities`  
`url` url  
`version` version  
`namespace` namespace  
`user` user  
`pwd` password  
`token` token  
`headers` headers  
`config` config  
`logger` logger  
`...` any parameter to pass to the service request

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

```
CSWDescribeRecord$clone(deep = FALSE)
```

*Arguments:*

`deep` Whether to make a deep clone.

**Note**

Class used internally by **ows4R** to trigger a CSW DescribeRecord request

**Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

CSWGetRecordById

*CSWGetRecordById*

---

**Description**

CSWGetRecordById

CSWGetRecordById

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) for modelling a CSW GetRecordById request

**Super classes**

[ows4R::OGCAbstractObject](#) -> [ows4R::OWSHttpRequest](#) -> CSWGetRecordById

**Public fields**

Id record Id property for request XML encoding

ElementSetName element set name property for XML encoding

**Methods****Public methods:**

- [CSWGetRecordById\\$new\(\)](#)
- [CSWGetRecordById\\$clone\(\)](#)

**Method** `new()`: Initializes a [CSWGetRecordById](#) service request

*Usage:*

```
CSWGetRecordById$new(  
  capabilities,  
  op,  
  url,  
  serviceVersion = "2.0.2",  
  user = NULL,  
  pwd = NULL,  
  token = NULL,  
  headers = headers,  
  config = httr::config(),
```

```

        id,
        elementSetName = "full",
        logger = NULL,
        ...
    )

```

**Arguments:**

capabilities an object of class [CSWCapabilities](#)  
op object of class [OWSOperation](#) as retrieved from capabilities  
url url  
serviceVersion serviceVersion. Default is "2.0.2"  
user user  
pwd password  
token token  
headers headers  
config config  
id record id  
elementSetName element set name. Default is "full"  
logger logger  
... any parameter to pass to the service request

**Method** clone(): The objects of this class are cloneable with this method.

**Usage:**

```
CSWGetRecordById$clone(deep = FALSE)
```

**Arguments:**

deep Whether to make a deep clone.

**Note**

Class used internally by **ows4R** to trigger a CSW GetRecordById request

**Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

CSWGetRecords

*CSWGetRecords*

---

**Description**

CSWGetRecords

CSWGetRecords

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) for modelling a CSW GetRecords request

**Super classes**

[ows4R::OGCAbstractObject](#) -> [ows4R::OWSHttpRequest](#) -> CSWGetRecords

**Public fields**

Query query property for request XML encoding

**Methods****Public methods:**

- [CSWGetRecords\\$new\(\)](#)
- [CSWGetRecords\\$clone\(\)](#)

**Method new():** Initializes a [CSWGetRecordById](#) service request

*Usage:*

```
CSWGetRecords$new(
  capabilities,
  op,
  url,
  serviceVersion = "2.0.2",
  user = NULL,
  pwd = NULL,
  token = NULL,
  headers = list(),
  config = httr::config(),
  query = NULL,
  logger = NULL,
  ...
)
```

*Arguments:*

capabilities an object of class [CSWCapabilities](#)  
 op object of class [OWSOperation](#) as retrieved from capabilities  
 url url  
 serviceVersion serviceVersion. Default is "2.0.2"  
 user user  
 pwd password  
 token token  
 headers headers  
 config config  
 query object of class [CSWQuery](#)  
 logger logger

... any parameter to pass to the service request, such as `resultType`, `startPosition`, `maxRecords`, `outputFormat`, or `outputSchema`

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

```
CSWGetRecords$clone(deep = FALSE)
```

*Arguments:*

`deep` Whether to make a deep clone.

### Note

Class used internally by **ows4R** to trigger a CSW GetRecords request

### Author(s)

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

CSWHarvest

*CSWHarvest*

---

### Description

CSWHarvest

CSWHarvest

### Format

[R6Class](#) object.

### Value

Object of [R6Class](#) for modelling a CSW Harvest request

### Super classes

[ows4R::OGCAbstractObject](#) -> [ows4R::OWSHttpRequest](#) -> CSWHarvest

### Public fields

`Source` source property for request XML encoding

`ResourceType` resource type property for request XML encoding

`ResourceFormat` resource format property for request XML encoding

## Methods

### Public methods:

- [CSWHarvest\\$new\(\)](#)
- [CSWHarvest\\$clone\(\)](#)

**Method** `new()`: Initializes a [CSWHarvest](#) service request

*Usage:*

```
CSWHarvest$new(
  capabilities,
  op,
  url,
  serviceVersion = "2.0.2",
  user = NULL,
  pwd = NULL,
  token = NULL,
  headers = list(),
  config = httr::config(),
  source = NULL,
  resourceType = "http://www.isotc211.org/schemas/2005/gmd/",
  resourceFormat = "application/xml",
  logger = NULL,
  ...
)
```

*Arguments:*

`capabilities` an object of class [CSWCapabilities](#)  
`op` object of class [OWSOperation](#) as retrieved from capabilities  
`url` url  
`serviceVersion` serviceVersion. Default is "2.0.2"  
`user` user  
`pwd` password  
`token` token  
`headers` headers  
`config` config  
`source` source  
`resourceType` resource type. Default is "http://www.isotc211.org/schemas/2005/gmd/"  
`resourceFormat` resource format. Default is "application/xml"  
`logger` logger  
`...` any parameter to pass to the service request

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

```
CSWHarvest$clone(deep = FALSE)
```

*Arguments:*

`deep` Whether to make a deep clone.



**Note**

Class used internally by **ows4R** to trigger a CSW Harvest request

**Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

CSWQuery

*CSWQuery*

---

**Description**

CSWQuery

CSWQuery

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) for modelling an CSW Query

**Super class**

[ows4R::OGCAbstractObject](#) -> CSWQuery

**Public fields**

ElementSetName element set name property for request XML encoding

constraint property for request XML encoding

**Methods****Public methods:**

- [CSWQuery\\$new\(\)](#)
- [CSWQuery\\$setServiceVersion\(\)](#)
- [CSWQuery\\$clone\(\)](#)

**Method new():** This method is used to instantiate an CSWQuery object. The elementSetName can be either "full" (default), "brief" or "summary". A constraint CSWConstraint can be defined for the query. The typeName indicates to query (default "csw:Record"). The serviceVersion gives the CSW service version (default "2.0.2")

*Usage:*

```
CSWQuery$new(
  elementSetName = "full",
  constraint = NULL,
  typeNames = "csw:Record",
  serviceVersion = "2.0.2"
)
```

*Arguments:*

elementSetName element set name. Default is "full"  
 constraint object of class [CSWConstraint](#)  
 typeNames type names  
 serviceVersion CSW service version

**Method** `setServiceVersion()`: Set service version. The methods ensures property naming of `typeNames` depending on the service version

*Usage:*

```
CSWQuery$setServiceVersion(serviceVersion)
```

*Arguments:*

serviceVersion service version

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

```
CSWQuery$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

**Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

**Examples**

```
#CSWQuery - elementSetName
query_full <- CSWQuery$new()
query_brief <- CSWQuery$new(elementSetName = "brief")
query_summary <- CSWQuery$new(elementSetName = "summary")

#CSWQuery - cqlText with title
cons <- CSWConstraint$new(cqlText = "dc:title like '%ips%'")
query <- CSWQuery$new(constraint = cons)

#CSW 2.0.2 - Query - Filter / AnyText
filter <- OGCFilter$new( PropertyIsLike$new("csw:AnyText", "%Physio%"))
cons <- CSWConstraint$new(filter = filter)
query <- CSWQuery$new(constraint = cons)

#CSW 2.0.2 - Query - Filter / AnyText Equal
filter <- OGCFilter$new( PropertyIsEqualTo$new("csw:AnyText", "species"))
```

```

cons <- CSWConstraint$new(filter = filter)
query <- CSWQuery$new(constraint = cons)

#CSW 2.0.2 - Query - Filter / AnyText And Not
filter <- OGCFilter$new(And$new(
  PropertyIsLike$new("csw:AnyText", "%lorem%"),
  PropertyIsLike$new("csw:AnyText", "%ipsum%"),
  Not$new(
    PropertyIsLike$new("csw:AnyText", "%dolor%")
  )
))
cons <- CSWConstraint$new(filter = filter)
query <- CSWQuery$new(constraint = cons)

#CSW 2.0.2 - Query - Filter / AnyText And nested Or
filter <- OGCFilter$new(And$new(
  PropertyIsEqualTo$new("dc:title", "Aliquam fermentum purus quis arcu"),
  PropertyIsEqualTo$new("dc:format", "application/pdf"),
  Or$new(
    PropertyIsEqualTo$new("dc:type", "http://purl.org/dc/dcmitype/Dataset"),
    PropertyIsEqualTo$new("dc:type", "http://purl.org/dc/dcmitype/Service"),
    PropertyIsEqualTo$new("dc:type", "http://purl.org/dc/dcmitype/Image"),
    PropertyIsEqualTo$new("dc:type", "http://purl.org/dc/dcmitype/Text")
  )
))
cons <- CSWConstraint$new(filter = filter)
query <- CSWQuery$new(elementSetName = "brief", constraint = cons)

#CSW 2.0.2 - Query - Filter / BBOX
bbox <- matrix(c(-180,180,-90,90), nrow = 2, ncol = 2, byrow = TRUE,
  dimnames = list(c("x", "y"), c("min","max")))
filter <- OGCFilter$new( BBOX$new(bbox = bbox) )
cons <- CSWConstraint$new(filter = filter)
query <- CSWQuery$new(elementSetName = "brief", constraint = cons)

```

---

CSWRecordProperty

*CSWRecordProperty*


---

### Description

CSWRecordProperty

CSWRecordProperty

### Format

[R6Class](#) object.

### Value

Object of [R6Class](#) for modelling an CSW RecordProperty

**Super class**

`ows4R::OGCAbstractObject` -> CSWRecordProperty

**Public fields**

`wrap` internal property for XML encoding

`Name` name property for request XML encoding

`Value` property for request XML encoding

**Methods****Public methods:**

- `CSWRecordProperty$new()`
- `CSWRecordProperty$clone()`

**Method** `new()`: Initializes an object of class `CSWRecordProperty`

*Usage:*

```
CSWRecordProperty$new(name, value, cswVersion = "2.0.2")
```

*Arguments:*

`name` name

`value` value

`cswVersion` CSW service version. Default is "2.0.2"

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

```
CSWRecordProperty$clone(deep = FALSE)
```

*Arguments:*

`deep` Whether to make a deep clone.

**Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

**Examples**

```
rp <- CSWRecordProperty$new(name = "NAME", value = "VALUE")
rp_xml <- rp$encode() #see how it looks in XML
```

---

CSWTransaction	<i>CSWTransaction</i>
----------------	-----------------------

---

**Description**

CSWTransaction

CSWTransaction

**Format**[R6Class](#) object.**Value**Object of [R6Class](#) for modelling a CSW Transaction request**Super classes**[ows4R::OGCAbstractObject](#) -> [ows4R::OWSHttpRequest](#) -> CSWTransaction**Methods****Public methods:**

- [CSWTransaction\\$new\(\)](#)
- [CSWTransaction\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes a [CSWTransaction](#) service request*Usage:*

```
CSWTransaction$new(  
  capabilities,  
  op,  
  url,  
  serviceVersion,  
  type,  
  user = NULL,  
  pwd = NULL,  
  token = NULL,  
  headers = list(),  
  record = NULL,  
  recordProperty = NULL,  
  constraint = NULL,  
  logger = NULL,  
  ...  
)
```

*Arguments:*capabilities an object of class [CSWCapabilities](#)

op object of class [OWSOperation](#) as retrieved from capabilities  
url url  
serviceVersion serviceVersion. Default is "2.0.2"  
type type of transaction, either "Insert", "Update", or "Delete"  
user user  
pwd password  
token token  
headers headers  
record record  
recordProperty record property  
constraint constraint  
logger logger  
. . . any parameter to pass to the service request

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

```
CSWTransaction$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

#### Note

Class used internally by **ows4R** to trigger a CSW Transaction request

#### Author(s)

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

getOWSNamespace

*getOWSNamespace*

---

#### Description

getOWSNamespace gets a namespace given its id

#### Usage

```
getOWSNamespace(id)
```

#### Arguments

id namespace prefix

#### Author(s)

Emmanuel Blondel, <emmanuel.blondel1@gmail.com>

**Examples**

```
getOWSNamespace("GMD")
```

---

getOWSNamespace	<i>getOWSNamespace</i>
-----------------	------------------------

---

**Description**

getOWSNamespace gets the list of namespaces registered

**Usage**

```
getOWSNamespace()
```

**Author(s)**

Emmanuel Blondel, <emmanuel.blondel1@gmail.com>

**Examples**

```
getOWSNamespace()
```

---

Not	<i>Not</i>
-----	------------

---

**Description**

Not

Not

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) for modelling an Not

**Super classes**

[ows4R::OGCAbstractObject](#) -> [ows4R::OGCExpression](#) -> [ows4R::UnaryLogicOpType](#) -> Not

**Methods****Public methods:**

- [Not\\$new\(\)](#)
- [Not\\$clone\(\)](#)

**Method** `new()`: Initializes an [Not](#) expression

*Usage:*

`Not$new(...)`

*Arguments:*

... list of objects of class [OGCExpression](#)

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

`Not$clone(deep = FALSE)`

*Arguments:*

`deep` Whether to make a deep clone.

**Author(s)**

Emmanuel Blondel <emmanuel.blondell@gmail.com>

**Examples**

```
expr <- PropertyIsEqualTo$new(PropertyName = "property", Literal = "value")
not <- Not$new(expr)
not_xml <- not$encode() #see how it looks like in XML
```

---

OGCAbstractObject

*OGCAbstractObject*

---

**Description**

OGCAbstractObject

OGCAbstractObject

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) for modelling an OGCAbstractObject



**Public fields**

verbose.info logical property to indicate whether INFO logs have to be displayed  
 verbose.debug logical property to indicate whether DEBUG logs have to be displayed  
 loggerType logger type, either NULL, "INFO", or "DEBUG"  
 wrap internal property for XML encoding  
 element element used for XML encoding  
 namespace namespace used for XML encoding  
 defaults default values to be used for XML encoding  
 attrs attributes to be used for XML encoding

**Methods****Public methods:**

- [OGCAbstractObject\\$logger\(\)](#)
- [OGCAbstractObject\\$INFO\(\)](#)
- [OGCAbstractObject\\$WARN\(\)](#)
- [OGCAbstractObject\\$ERROR\(\)](#)
- [OGCAbstractObject\\$new\(\)](#)
- [OGCAbstractObject\\$getClassname\(\)](#)
- [OGCAbstractObject\\$getClass\(\)](#)
- [OGCAbstractObject\\$isFieldInheritedFrom\(\)](#)
- [OGCAbstractObject\\$getNamespaceDefinition\(\)](#)
- [OGCAbstractObject\\$encode\(\)](#)
- [OGCAbstractObject\\$clone\(\)](#)

**Method** `logger()`: A basic logger function

*Usage:*

`OGCAbstractObject$logger(type, text)`

*Arguments:*

type type of logs message.

text log message text to be displayed

**Method** `INFO()`: a basic INFO logger function

*Usage:*

`OGCAbstractObject$INFO(text)`

*Arguments:*

text log message text to be displayed

**Method** `WARN()`: a basic WARN logger function

*Usage:*

`OGCAbstractObject$WARN(text)`

*Arguments:*

text log message text to be displayed

**Method ERROR():** a basic ERROR logger function

*Usage:*

```
OGCAbstractObject$ERROR(text)
```

*Arguments:*

text log message text to be displayed

**Method new():** Initializes an object extending [OGCAbstractObject](#)

*Usage:*

```
OGCAbstractObject$new(
  xml = NULL,
  element = NULL,
  namespacePrefix = NULL,
  attrs = list(),
  defaults = list(),
  wrap = FALSE,
  logger = NULL
)
```

*Arguments:*

xml object of class [XMLInternalNode-class](#) from [XML](#)

element element name

namespacePrefix namespace prefix for XML encoding

attrs list of attributes

defaults list of default values

wrap whether XML element has to be wrapped during XML encoding

logger logger

**Method getClassName():** Get class name

*Usage:*

```
OGCAbstractObject$getClassName()
```

*Returns:* an object of class character

**Method getClass():** Get class

*Usage:*

```
OGCAbstractObject$getClass()
```

*Returns:* an object of class R6Class

**Method isFieldInheritedFrom():** Utility to return the parent class in which field is defined

*Usage:*

```
OGCAbstractObject$isFieldInheritedFrom(field)
```

*Arguments:*

field field name

*Returns:* object of class R6Class

**Method** getNamespaceDefinition(): Gets the namespace definition

*Usage:*

```
OGCAbstractObject$getNamespaceDefinition(recursive = FALSE)
```

*Arguments:*

recursive Get all namespace recursively

*Returns:* the namespace definitions as named list

**Method** encode(): Encodes as XML. The addNS . Extra parameters related to **geometa** objects: geometa\_validate (TRUE by default) and geometa\_inspire (FALSE by default) can be used to perform ISO and INSPIRE validation respectively. In that case on object of class geometa::INSPIREMetadataValidator, with a proper user API key, should be specified as geometa\_inspireValidator argument.

*Usage:*

```
OGCAbstractObject$encode(  
  addNS = TRUE,  
  geometa_validate = TRUE,  
  geometa_inspire = FALSE,  
  geometa_inspireValidator = NULL  
)
```

*Arguments:*

addNS addNS controls the addition of XML namespaces

geometa\_validate Relates to **geometa** object ISO validation. Default is TRUE

geometa\_inspire Relates to **geometa** object INSPIRE validation. Default is FALSE

geometa\_inspireValidator Relates to **geometa** object INSPIRE validation. Default is NULL

*Returns:* an object of class [XMLInternalNode-class](#) from **XML**

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

```
OGCAbstractObject$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

#### Note

abstract class used by **ows4R**

#### Author(s)

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

OGCExpression

*OGCExpression***Description**

OGCExpression

OGCExpression

**Format**

R6Class object.

**Value**

Object of R6Class for modelling an OGC Expression

**Super class**

ows4R::OGCAbstractObject -&gt; OGCExpression

**Methods****Public methods:**

- OGCExpression\$new()
- OGCExpression\$setExprVersion()
- OGCExpression\$getExprVersion()
- OGCExpression\$clone()

**Method new():** Initializes an object of class OGCExpression*Usage:*

```
OGCExpression$new(
  element,
  namespacePrefix,
  attrs = NULL,
  defaults = NULL,
  exprVersion = "1.1.0"
)
```

*Arguments:*

element element name  
 namespacePrefix XML namespace prefix  
 attrs attributes  
 defaults default values  
 exprVersion OGC version for the expression

**Method** `setExprVersion()`: Sets expression version. The methods will control proper XML namespace prefix setting

*Usage:*

`OGCExpression$setExprVersion(exprVersion)`

*Arguments:*

`exprVersion` OGC expression version

**Method** `getExprVersion()`: Gets expression version

*Usage:*

`OGCExpression$getExprVersion()`

*Returns:* object of class character

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

`OGCExpression$clone(deep = FALSE)`

*Arguments:*

`deep` Whether to make a deep clone.

#### Note

abstract class

#### Author(s)

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

OGCFilter

*OGCFilter*

---

#### Description

OGCFilter

OGCFilter

#### Format

[R6Class](#) object.

#### Value

Object of [R6Class](#) for modelling an OGC Filter

#### Super class

[ows4R::OGCAbstractObject](#) -> OGCFilter

**Public fields**

expr OGC expression

**Methods****Public methods:**

- [OGCFilter\\$new\(\)](#)
- [OGCFilter\\$setFilterVersion\(\)](#)
- [OGCFilter\\$clone\(\)](#)

**Method** `new()`: Initializes an object of class [OGCFilter](#).

*Usage:*

```
OGCFilter$new(expr, filterVersion = "1.1.0")
```

*Arguments:*

expr object of class [OGCExpression](#)

filterVersion OGC filter version. Default is "1.1.0"

**Method** `setFilterVersion()`: Sets the OGC filter version

*Usage:*

```
OGCFilter$setFilterVersion(filterVersion)
```

*Arguments:*

filterVersion OGC filter version

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

```
OGCFilter$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

**Author(s)**

Emmanuel Blondel <emmanuel.blondell@gmail.com>

**Examples**

```
expr <- PropertyIsEqualTo$new(PropertyName = "property", Literal = "value")
not <- Not$new(expr)
not_xml <- not$encode() #see how it looks like in XML
```

---

Or

*Or*

---

### Description

Or

Or

### Format

[R6Class](#) object.

### Value

Object of [R6Class](#) for modelling an Or operator

### Super classes

[ows4R::OGCAbstractObject](#) -> [ows4R::OGCExpression](#) -> [ows4R::BinaryLogicOpType](#) -> Or

### Methods

#### Public methods:

- [Or\\$new\(\)](#)
- [Or\\$clone\(\)](#)

**Method** `new()`: Initializes an [Or](#) expression

*Usage:*

`Or$new(...)`

*Arguments:*

... list of objects of class [OGCExpression](#)

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

`Or$clone(deep = FALSE)`

*Arguments:*

deep Whether to make a deep clone.

### Author(s)

Emmanuel Blondel <[emmanuel.blondel1@gmail.com](mailto:emmanuel.blondel1@gmail.com)>

**Examples**

```

expr1 <- PropertyIsEqualTo$new(PropertyName = "property1", Literal = "value1")
expr2 <- PropertyIsEqualTo$new(PropertyName = "property2", Literal = "value2")
or <- Or$new(expr1,expr2)
or_xml <- or$encode() #see how it looks like in XML

```

ows4R

*Interface to OGC Web-Services***Description**

Provides an Interface to Web-Services defined as standards by the Open Geospatial Consortium (OGC), including Web Feature Service (WFS) for vector data, Web Coverage Service (WCS), Catalogue Service (CSW) for ISO/OGC metadata, and associated standards such as the common web-service specification (OWS) and OGC Filter Encoding. Partial support is provided for the Web Map Service (WMS) and Web Processing Service (WPS). The purpose is to add support for additional OGC service standards such as Web Coverage Processing Service (WCPS) or OGC API.

**Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

OWSBoundingBox

*OWSBoundingBox***Description**

OWSBoundingBox

OWSBoundingBox

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) for modelling an OGC Bounding Box

**Super class**

[ows4R::OGCAbstractObject](#) -> OWSBoundingBox



**Public fields**

attrs attributes to be associated to XML

LowerCorner lower corner coordinates

UpperCorner upper corner coordinates

**Methods****Public methods:**

- [OWSBoundingBox\\$new\(\)](#)
- [OWSBoundingBox\\$decode\(\)](#)
- [OWSBoundingBox\\$getBBOX\(\)](#)
- [OWSBoundingBox\\$clone\(\)](#)

**Method** `new()`: Initializes an object of class [OWSBoundingBox](#)

*Usage:*

```
OWSBoundingBox$new(
  xml = NULL,
  element = NULL,
  namespacePrefix = NULL,
  owsVersion,
  serviceVersion,
  logger = NULL
)
```

*Arguments:*

xml an object of class [XMLInternalNode-class](#) to initialize from XML

element element name

namespacePrefix namespace prefix

owsVersion OWS version

serviceVersion service version

logger logger

**Method** `decode()`: Decodes an object of class [OWSBoundingBox](#) from XML

*Usage:*

```
OWSBoundingBox$decode(xml)
```

*Arguments:*

xml object of class [XMLInternalNode-class](#) from XML

**Method** `getBBOX()`: Get BBOX as object of class `bbox` from `sf` package

*Usage:*

```
OWSBoundingBox$getBBOX()
```

*Returns:* a numeric vector of length four, with xmin, ymin, xmax and ymax values

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

```
OWSBoundingBox$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

**Author(s)**

Emmanuel Blondel <emmanuel.blondell@gmail.com>

---

OWSCapabilities

*OWSGetCapabilities*

---

**Description**

OWSGetCapabilities

OWSGetCapabilities

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) with methods for interfacing an abstract OWS Get Capabilities document.

**Super class**

[ows4R::OGCAbstractObject](#) -> OWSCapabilities

**Methods****Public methods:**

- [OWSCapabilities\\$new\(\)](#)
- [OWSCapabilities\\$setClient\(\)](#)
- [OWSCapabilities\\$getClient\(\)](#)
- [OWSCapabilities\\$getUrl\(\)](#)
- [OWSCapabilities\\$getService\(\)](#)
- [OWSCapabilities\\$getServiceVersion\(\)](#)
- [OWSCapabilities\\$getOWSVersion\(\)](#)
- [OWSCapabilities\\$getRequest\(\)](#)
- [OWSCapabilities\\$getServiceIdentification\(\)](#)
- [OWSCapabilities\\$getServiceProvider\(\)](#)
- [OWSCapabilities\\$getOperationsMetadata\(\)](#)
- [OWSCapabilities\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes a [OWSCapabilities](#) object

*Usage:*

```
OWSCapabilities$new(
  element = NULL,
  namespacePrefix = NULL,
  url,
  service,
  owsVersion,
  serviceVersion,
  logger = NULL,
  ...
)
```

*Arguments:*

element element

namespacePrefix namespace prefix

url url

service service

owsVersion OWS version

serviceVersion service version

logger logger type NULL, "INFO" or "DEBUG"

... any other parameter to pass to [OWSGetCapabilities](#) service request

**Method** `setClient()`: Sets the OGC client

*Usage:*

```
OWSCapabilities$setClient(client)
```

*Arguments:*

client an object extending [OWSClient](#)

**Method** `getClient()`: Get client

*Usage:*

```
OWSCapabilities$getClient()
```

*Arguments:*

an object extending [OWSClient](#)

**Method** `getUrl()`: Get URL

*Usage:*

```
OWSCapabilities$getUrl()
```

*Returns:* an object of class character

**Method** `getService()`: Get service

*Usage:*

```
OWSCapabilities$getService()
```

*Returns:* an object of class character

**Method** `getServiceVersion()`: Get service version

*Usage:*

OWSCapabilities\$getServiceVersion()

*Returns:* an object of class character

**Method** getOWSVersion(): Get OWS version

*Usage:*

OWSCapabilities\$getOWSVersion()

*Returns:* an object of class character

**Method** getRequest(): Get request

*Usage:*

OWSCapabilities\$request()

*Returns:* an object of class [OWSGetCapabilities](#)

**Method** getServiceIdentification(): Get service identification

*Usage:*

OWSCapabilities\$getServiceIdentification()

*Returns:* an object of class [OWSServiceIdentification](#)

**Method** getServiceProvider(): Get service provider

*Usage:*

OWSCapabilities\$getServiceProvider()

*Returns:* an object of class [OWSServiceProvider](#)

**Method** getOperationsMetadata(): Get service operations metadata

*Usage:*

OWSCapabilities\$getOperationsMetadata()

*Returns:* an object of class [OWSOperationsMetadata](#)

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

OWSCapabilities\$clone(deep = FALSE)

*Arguments:*

deep Whether to make a deep clone.

#### Note

abstract class used by **ows4R**

#### Author(s)

Emmanuel Blondel <emmanuel.blondell@gmail.com>

---

OWSClient

*OWSClient*

---

### Description

OWSClient

OWSClient

### Format

[R6Class](#) object.

### Value

Object of [R6Class](#) with methods for interfacing a Common OGC web-service.

### Super class

[ows4R: :OGCAbstractObject](#) -> OWSClient

### Public fields

url Base url of the OWS service

version version of the OWS service

capabilities object giving the OWS service capabilities

### Methods

#### Public methods:

- [OWSClient\\$new\(\)](#)
- [OWSClient\\$getUrl\(\)](#)
- [OWSClient\\$getVersion\(\)](#)
- [OWSClient\\$getCapabilities\(\)](#)
- [OWSClient\\$getUser\(\)](#)
- [OWSClient\\$getPwd\(\)](#)
- [OWSClient\\$getToken\(\)](#)
- [OWSClient\\$getHeaders\(\)](#)
- [OWSClient\\$getConfig\(\)](#)
- [OWSClient\\$getCASUrl\(\)](#)
- [OWSClient\\$clone\(\)](#)

**Method new():** This method is used to instantiate a OWSClient with the url of the OGC service. Authentication is supported using basic auth (using user/pwd arguments), bearer token (using token argument), or custom (using headers argument). By default, the logger argument will be set to NULL (no logger). This argument accepts two possible values: INFO: to print only **ows4R** logs, DEBUG: to print more verbose logs

*Usage:*

```
OWSClient$new(  
  url,  
  service,  
  serviceVersion,  
  user = NULL,  
  pwd = NULL,  
  token = NULL,  
  headers = c(),  
  config = httr::config(),  
  cas_url = NULL,  
  logger = NULL  
)
```

*Arguments:*

url url  
service service name  
serviceVersion CSW service version  
user user  
pwd password  
token token  
headers headers  
config config  
cas\_url Central Authentication Service (CAS) URL  
logger logger

**Method getUrl():** Get URL*Usage:*

```
OWSClient$getUrl()
```

*Returns:* the url of the service, object of class character

**Method getVersion():** Get version*Usage:*

```
OWSClient$getVersion()
```

*Returns:* the version of the service, object of class character

**Method getCapabilities():** Get capabilities*Usage:*

```
OWSClient$getCapabilities()
```

*Returns:* the capabilities, object of class [OWSCapabilities](#)

**Method getUser():** Get user*Usage:*

```
OWSClient$getUser()
```

*Returns:* the user, object of class character

**Method** getPwd(): Get password

*Usage:*

OWSClient\$getPwd()

*Returns:* the password, object of class character

**Method** getToken(): Get token

*Usage:*

OWSClient\$getToken()

*Returns:* the token, object of class character

**Method** getHeaders(): Get headers

*Usage:*

OWSClient\$getHeaders()

*Returns:* the headers, object of class character

**Method** getConfig(): Get **httr** config

*Usage:*

OWSClient\$config()

*Returns:* the **httr** config, if any

**Method** getCASUrl(): Get CAS URL

*Usage:*

OWSClient\$CASUrl()

*Returns:* a CAS URL

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

OWSClient\$clone(deep = FALSE)

*Arguments:*

deep Whether to make a deep clone.

#### **Note**

Abstract class used internally by **ows4R**

#### **Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

OWSCodeType

*OWSCodeType*

---

### Description

OWSCodeType

OWSCodeType

### Format

[R6Class](#) object.

### Value

Object of [R6Class](#) for modelling an OWS CodeType

### Super class

[ows4R: :OGCAbstractObject](#) -> OWSCodeType

### Public fields

value code type

### Methods

#### Public methods:

- [OWSCodeType\\$new\(\)](#)
- [OWSCodeType\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes an object of class [OWSCodeType](#)

*Usage:*

```
OWSCodeType$new(xml = NULL, owsVersion = "1.1", value)
```

*Arguments:*

xml object of class [XMLInternalNode-class](#) from **XML**

owsVersion OWS version. Default is "1.1"

value the code type

**Method** [clone\(\)](#): The objects of this class are cloneable with this method.

*Usage:*

```
OWSCodeType$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

### Author(s)

Emmanuel Blondel <emmanuel.blondel1@gmail.com>



---

OWSGetCapabilities	<i>OWSGetCapabilities</i>
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---

**Description**

OWSGetCapabilities

OWSGetCapabilities

**Format**

R6Class object.

**Value**

Object of R6Class for modelling a GetCapabilities request

**Super classes**

ows4R::OGCAbstractObject -&gt; ows4R::OWSHttpRequest -&gt; OWSGetCapabilities

**Methods****Public methods:**

- OWSGetCapabilities\$new()
- OWSGetCapabilities\$clone()

**Method new():** Initializes an OWSGetCapabilities service request*Usage:*

```
OWSGetCapabilities$new(
  element = NULL,
  namespacePrefix = NULL,
  url,
  service,
  version,
  user = NULL,
  pwd = NULL,
  token = NULL,
  headers = c(),
  config = httr::config(),
  ...
)
```

*Arguments:*

```
element element
namespacePrefix namespace prefix
url url
```

```

service service name
version service version
user user
pwd password
token token
headers headers
config config
... any other parameter to pass to the request

```

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

```
OWSGetCapabilities$clone(deep = FALSE)
```

*Arguments:*

`deep` Whether to make a deep clone.

### Note

Class used internally by **ows4R** to trigger a OWS GetCapabilities request

### Author(s)

Emmanuel Blondel <emmanuel.blondell@gmail.com>

---

OWSHttpRequest

*OWSHttpRequest*

---

### Description

OWSHttpRequest

OWSHttpRequest

### Format

[R6Class](#) object.

### Value

Object of [R6Class](#) for modelling a generic OWS http request

### Super class

[ows4R::OGCAbstractObject](#) -> OWSHttpRequest

**Methods****Public methods:**

- [OWSHttpRequest\\$new\(\)](#)
- [OWSHttpRequest\\$execute\(\)](#)
- [OWSHttpRequest\\$getCapabilities\(\)](#)
- [OWSHttpRequest\\$getRequest\(\)](#)
- [OWSHttpRequest\\$getRequestHeaders\(\)](#)
- [OWSHttpRequest\\$getStatus\(\)](#)
- [OWSHttpRequest\\$getResponse\(\)](#)
- [OWSHttpRequest\\$getException\(\)](#)
- [OWSHttpRequest\\$getResult\(\)](#)
- [OWSHttpRequest\\$setResult\(\)](#)
- [OWSHttpRequest\\$clone\(\)](#)

**Method** `new()`: Initializes an OWS HTTP request

*Usage:*

```
OWSHttpRequest$new(
    element,
    namespacePrefix,
    capabilities,
    op,
    type,
    url,
    request,
    user = NULL,
    pwd = NULL,
    token = NULL,
    headers = c(),
    config = httr::config(),
    namedParams = NULL,
    attrs = NULL,
    contentType = "text/xml",
    mimeType = "text/xml",
    logger = NULL,
    ...
)
```

*Arguments:*

`element` element

`namespacePrefix` namespace prefix

`capabilities` object of class or extending [OWSCapabilities](#)

`op` object of class [OWSOperation](#)

`type` type of request, eg. GET, POST

`url` url

`request` request name

user user  
pwd password  
token token  
headers headers  
config config  
namedParams a named list  
attrs attributes  
contentType content type. Default value is "text/xml"  
mimeType mime type. Default value is "text/xml"  
logger logger  
... any other parameter

**Method execute():** Executes the request

*Usage:*

OWSHttpRequest\$execute()

**Method getCapabilities():** Get capabilities

*Usage:*

OWSHttpRequest\$getCapabilities()

*Returns:* an object of class or extending [OWSCapabilities](#)

**Method getRequest():** Get request

*Usage:*

OWSHttpRequest\$request()

*Returns:* the request

**Method getRequestHeaders():** Get request headers

*Usage:*

OWSHttpRequest\$requestHeaders()

*Returns:* the request headers

**Method getStatus():** get status code

*Usage:*

OWSHttpRequest\$status()

*Returns:* the request status code

**Method getResponse():** get request response

*Usage:*

OWSHttpRequest\$response()

*Returns:* the request response

**Method getException():** get request exception

*Usage:*

`OWSHttpRequest$getException()`

*Returns:* the request exception

**Method** `getResult()`: Get the result TRUE if the request is successful, FALSE otherwise

*Usage:*

`OWSHttpRequest$getResult()`

*Returns:* the result, object of class logical

**Method** `setResult()`: Set the result

*Usage:*

`OWSHttpRequest$setResult(result)`

*Arguments:*

result object of class logical

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

`OWSHttpRequest$clone(deep = FALSE)`

*Arguments:*

deep Whether to make a deep clone.

#### Note

Abstract class used internally by **ows4R**

#### Author(s)

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

OWSNamespace

*OWSNamespace*

---

#### Description

OWSNamespace

OWSNamespace

#### Format

[R6Class](#) object.

#### Value

Object of [R6Class](#) for modelling an OWS Namespace

**Public fields**

id namespace id  
uri namespace uri

**Methods****Public methods:**

- [OWSNamespace\\$new\(\)](#)
- [OWSNamespace\\$getDefinition\(\)](#)
- [OWSNamespace\\$clone\(\)](#)

**Method** `new()`: Initializes an [OWSNamespace](#)

*Usage:*

```
OWSNamespace$new(id, uri)
```

*Arguments:*

id id  
uri uri

**Method** `getDefinition()`: Get namespace definition

*Usage:*

```
OWSNamespace$getDefinition()
```

*Returns:* a named list with id and uri

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

```
OWSNamespace$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

**Note**

class used internally by ows4R for specifying XML namespaces

**Author(s)**

Emmanuel Blondel <emmanuel.blondell@gmail.com>

---

OWSOperation	<i>OWSOperation</i>
--------------	---------------------

---

**Description**

OWSOperation

OWSOperation

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) for modelling an OGC Operation

**Methods****Public methods:**

- [OWSOperation\\$new\(\)](#)
- [OWSOperation\\$getName\(\)](#)
- [OWSOperation\\$getParameters\(\)](#)
- [OWSOperation\\$getParameter\(\)](#)
- [OWSOperation\\$clone\(\)](#)

**Method new():** Initializes an object of class [OWSOperation](#).

*Usage:*

`OWSOperation$new(xmlObj, owsVersion, serviceVersion)`

*Arguments:*

xmlObj object of class [XMLInternalNode-class](#) from **XML**

owsVersion OWS version

serviceVersion service version

**Method getName():** Get operation name

*Usage:*

`OWSOperation$getName()`

*Returns:* an object of class character

**Method getParameters():** Get parameters

*Usage:*

`OWSOperation$getParameters()`

*Returns:* the parameters

**Method getParameter():** Get parameter

*Usage:*

```
OWSOperation$getParameter(name)
```

*Arguments:*

name name

*Returns:* the parameter

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

```
OWSOperation$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

### Note

Internal class used internally by **ows4R** when reading capabilities documents

### Author(s)

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

OWSOperationsMetadata *OWSOperationsMetadata*

---

### Description

OWSOperationsMetadata

OWSOperationsMetadata

### Format

[R6Class](#) object.

### Value

Object of [R6Class](#) for modelling an OGC Operations Metadata

### Methods

#### Public methods:

- [OWSOperationsMetadata\\$new\(\)](#)
- [OWSOperationsMetadata\\$getOperations\(\)](#)
- [OWSOperationsMetadata\\$clone\(\)](#)

**Method** new(): Initializes an [OWSOperationsMetadata](#) object

*Usage:*



OWSOperationsMetadata\$new(xmlObj, owsVersion, serviceVersion)

*Arguments:*

xmlObj object of class [XMLInternalNode-class](#) from **XML**

owsVersion OWS version

serviceVersion service version

**Method** getOperations(): Get operations

*Usage:*

OWSOperationsMetadata\$getOperations()

*Returns:* a list of [OWSOperation](#)

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

OWSOperationsMetadata\$clone(deep = FALSE)

*Arguments:*

deep Whether to make a deep clone.

#### Note

Abstract class used internally by **ows4R**

#### Author(s)

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

OWSRequest

*OWSRequest*

---

#### Description

OWSRequest

OWSRequest

#### Format

[R6Class](#) object.

#### Value

Object of [R6Class](#) modelling a OWS Service Capability Request

#### Super class

[ows4R::OGCAbstractObject](#) -> OWSRequest

## Methods

### Public methods:

- [OWSRequest\\$new\(\)](#)
- [OWSRequest\\$getName\(\)](#)
- [OWSRequest\\$getFormats\(\)](#)
- [OWSRequest\\$clone\(\)](#)

**Method** `new()`: Initializes an object of class [OWSRequest](#)

*Usage:*

```
OWSRequest$new(xmlObj, capabilities, version, logger = NULL)
```

*Arguments:*

`xmlObj` object of class [XMLInternalNode-class](#) from **XML**  
`capabilities` an object of class or extending [OWSCapabilities](#)  
`version` version  
`logger` logger

**Method** `getName()`: Get request name

*Usage:*

```
OWSRequest$getName()
```

*Returns:* the name, object of class character

**Method** `getFormats()`: Get request formats

*Usage:*

```
OWSRequest$getFormats()
```

*Returns:* the formats, object (vector) of class character

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

```
OWSRequest$clone(deep = FALSE)
```

*Arguments:*

`deep` Whether to make a deep clone.

## Note

Abstract class used by **ows4R**

## Author(s)

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

OWSServiceIdentification  
*OWSServiceIdentification*

---

## Description

OWSServiceIdentification  
OWSServiceIdentification

## Format

[R6Class](#) object.

## Value

Object of [R6Class](#) for modelling an OGC Service Identification

## Methods

### Public methods:

- [OWSServiceIdentification\\$new\(\)](#)
- [OWSServiceIdentification\\$getName\(\)](#)
- [OWSServiceIdentification\\$getTitle\(\)](#)
- [OWSServiceIdentification\\$getAbstract\(\)](#)
- [OWSServiceIdentification\\$getKeywords\(\)](#)
- [OWSServiceIdentification\\$getOnlineResource\(\)](#)
- [OWSServiceIdentification\\$getServiceType\(\)](#)
- [OWSServiceIdentification\\$getServiceTypeVersion\(\)](#)
- [OWSServiceIdentification\\$getFees\(\)](#)
- [OWSServiceIdentification\\$getAccessConstraints\(\)](#)
- [OWSServiceIdentification\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes an object of class [OWSServiceIdentification](#)

*Usage:*

```
OWSServiceIdentification$new(xmlObj, owsVersion, serviceVersion)
```

*Arguments:*

xmlObj object of class [XMLInternalNode-class](#) from **XML**

owsVersion OWS version

serviceVersion service version

**Method** [getName\(\)](#): Get service identification - name

*Usage:*

```
OWSServiceIdentification$getName()
```

*Returns:* the name, object of class character

**Method** getTitle(): Get service identification - title

*Usage:*

OWSServiceIdentification.getTitle()

*Returns:* the title, object of class character

**Method** getAbstract(): Get service identification - abstract

*Usage:*

OWSServiceIdentification.getAbstract()

*Returns:* the abstract, object of class character

**Method** getKeywords(): Get service identification - keywords

*Usage:*

OWSServiceIdentification.getKeywords()

*Returns:* the keywords, object of class character

**Method** getOnlineResource(): Get service identification - online resource

*Usage:*

OWSServiceIdentification.getOnlineResource()

*Returns:* the online resource, object of class character

**Method** getServiceType(): Get service identification - service type

*Usage:*

OWSServiceIdentification.getServiceType()

*Returns:* the service type, object of class character

**Method** getServiceTypeVersion(): Get service identification - service type version

*Usage:*

OWSServiceIdentification.getServiceTypeVersion()

*Returns:* the service type version, object of class character

**Method** getFees(): Get service identification - fees

*Usage:*

OWSServiceIdentification.getFees()

*Returns:* the fees, object of class character

**Method** getAccessConstraints(): Get service identification - access constraints

*Usage:*

OWSServiceIdentification.getAccessConstraints()

*Returns:* the access constraints, object of class character

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

OWSServiceIdentification.clone(deep = FALSE)

*Arguments:*

deep Whether to make a deep clone.

**Note**

Abstract class used internally by **ows4R**

**Author(s)**

Emmanuel Blondel <emmanuel.blondell@gmail.com>

---

OWSServiceProvider      *OWSServiceProvider*

---

**Description**

OWSServiceProvider

OWSServiceProvider

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) for modelling an OGC Service Provider

**Methods****Public methods:**

- [OWSServiceProvider\\$new\(\)](#)
- [OWSServiceProvider\\$getProviderName\(\)](#)
- [OWSServiceProvider\\$getProviderSite\(\)](#)
- [OWSServiceProvider\\$getServiceContact\(\)](#)
- [OWSServiceProvider\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes an object of class [OWSServiceProvider](#)

*Usage:*

```
OWSServiceProvider$new(xmlObj, owsVersion, serviceVersion)
```

*Arguments:*

xmlObj object of class [XMLInternalNode-class](#) from **XML**

owsVersion OWS version

serviceVersion service version

**Method** [getProviderName\(\)](#): Get provider name

*Usage:*

```
OWSServiceProvider$getProviderName()
```

*Arguments:*

the provider name, object of class character

**Method** `getProviderSite()`: Get provider site

*Usage:*

`OWSServiceProvider$getProviderSite()`

*Arguments:*

the provider site, object of class character

**Method** `getServiceContact()`: Get provider contact

*Usage:*

`OWSServiceProvider$getServiceContact()`

*Arguments:*

the provider contact, object of class [ISOResponsibleParty](#) from **geometa**

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

`OWSServiceProvider$clone(deep = FALSE)`

*Arguments:*

deep Whether to make a deep clone.

#### Note

Abstract class used internally by **ows4R**

#### Author(s)

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

OWSUtils

*OWSUtils*

---

#### Description

OWSUtils

#### Usage

OWSUtils

#### Format

[R6Class](#) object.

#### Value

set of OWS Utilities

**Static methods**

`getNamespaces()` Get the namespaces associated to a given XML object  
`findNamespace(namespaces, id, uri)` Finds a namespace by id or by URI  
`toBBOX(xmin, xmax, ymin, ymax)` Creates a bbox matrix from min/max x/y coordinates  
`findP4s(srsName, morphToESRI)` Finds the PROJ4 string definition for a given srsName  
`toCRS(srsName)` Converts a srsName into a CRS object  
`toEPSG(crs)` Get the EPSG code from a CRS object  
`getAspectRatio(bbox)` Get the aspect ratio for a given bbox

**Author(s)**

Emmanuel Blondel <emmanuel.blondell@gmail.com>

**Examples**

```
#toBBOX
bbox <- OWSUtils$toBBOX(-180,-90,180,90)

#toCRS
crs <- OWSUtils$toCRS("EPSG:4326")
```

---

OWSWG84BoundingBox    *OWSWG84BoundingBox*

---

**Description**

OWSWG84BoundingBox  
OWSWG84BoundingBox

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) for modelling an OGC WS84 BoundingBox

**Super classes**

[ows4R::OGCAbstractObject](#) -> [ows4R::OWSBoundingBox](#) -> OWSWG84BoundingBox

**Methods****Public methods:**

- [OWSGS84BoundingBox\\$new\(\)](#)
- [OWSGS84BoundingBox\\$clone\(\)](#)

**Method** `new()`: Initializes an object of class [OWSBoundingBox](#)

*Usage:*

```
OWSGS84BoundingBox$new(xml = NULL, owsVersion, serviceVersion, logger = NULL)
```

*Arguments:*

`xml` an object of class [XMLInternalNode-class](#) to initialize from XML

`owsVersion` OWS version

`serviceVersion` service version

`logger` logger

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

```
OWSGS84BoundingBox$clone(deep = FALSE)
```

*Arguments:*

`deep` Whether to make a deep clone.

**Note**

Class used internally by **geometa**

**Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

PropertyIsBetween      *PropertyIsBetween*

---

**Description**

PropertyIsBetween

PropertyIsBetween

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) for modelling an PropertyIsBetween



**Super classes**

[ows4R::OGCAbstractObject](#) -> [ows4R::OGCEXpression](#) -> PropertyIsBetween

**Public fields**

PropertyName property name field for XML encoding

lower lower value

upper upper value

**Methods****Public methods:**

- [PropertyIsBetween\\$new\(\)](#)
- [PropertyIsBetween\\$clone\(\)](#)

**Method** `new()`: Initializes an object extending [PropertyIsLike](#)

*Usage:*

```
PropertyIsBetween$new(PropertyName, lower, upper)
```

*Arguments:*

PropertyName property name

lower lower value

upper upper value

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

```
PropertyIsBetween$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

**Author(s)**

Emmanuel Blondel <[emmanuel.blondel1@gmail.com](mailto:emmanuel.blondel1@gmail.com)>

**Examples**

```
expr <- PropertyIsBetween$new(PropertyName = "property", lower = 1, upper = 10)
expr_xml <- expr$encode() #see how it looks like in XML
```

---

PropertyIsEqualTo      *PropertyIsEqualTo*

---

**Description**

PropertyIsEqualTo

PropertyIsEqualTo

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) for modelling an PropertyIsEqualTo

**Super classes**

[ows4R::OGCAbstractObject](#) -> [ows4R::OGCEXpression](#) -> [ows4R::BinaryComparisonOpType](#)  
-> PropertyIsEqualTo

**Methods****Public methods:**

- [PropertyIsEqualTo\\$new\(\)](#)
- [PropertyIsEqualTo\\$clone\(\)](#)

**Method** `new()`: Initializes an object extending [PropertyIsEqualTo](#)

*Usage:*

`PropertyIsEqualTo$new(PropertyName, Literal, matchCase = NA)`

*Arguments:*

PropertyName property name

Literal literal

matchCase match case

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

`PropertyIsEqualTo$clone(deep = FALSE)`

*Arguments:*

deep Whether to make a deep clone.

**Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

**Examples**

```
expr <- PropertyIsEqualTo$new(PropertyName = "property", Literal = "value")
expr_xml <- expr$encode() #see how it looks like in XML
```

---

PropertyIsGreaterThanOrEqualTo *PropertyIsGreaterThanOrEqualTo*

---

**Description**

PropertyIsGreaterThanOrEqualTo  
PropertyIsGreaterThanOrEqualTo

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) for modelling an PropertyIsGreaterThanOrEqualTo

**Super classes**

[ows4R::OGCAbstractObject](#) -> [ows4R::OGCExpression](#) -> [ows4R::BinaryComparisonOpType](#)  
-> PropertyIsGreaterThanOrEqualTo

**Methods****Public methods:**

- [PropertyIsGreaterThanOrEqualTo\\$new\(\)](#)
- [PropertyIsGreaterThanOrEqualTo\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes an object extending [PropertyIsGreaterThanOrEqualTo](#)

*Usage:*

```
PropertyIsGreaterThanOrEqualTo$new(PropertyName, Literal, matchCase = NA)
```

*Arguments:*

PropertyName property name  
Literal literal  
matchCase match case

**Method** [clone\(\)](#): The objects of this class are cloneable with this method.

*Usage:*

```
PropertyIsGreaterThanOrEqualTo$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

**Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

**Examples**

```
expr <- PropertyIsGreaterThanOrEqualTo$new(PropertyName = "property", Literal = "value")
expr_xml <- expr$encode() #see how it looks like in XML
```

---

PropertyIsGreaterThanOrEqualTo

*PropertyIsGreaterThanOrEqualTo*

---

**Description**

PropertyIsGreaterThanOrEqualTo

PropertyIsGreaterThanOrEqualTo

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) for modelling an PropertyIsGreaterThanOrEqualTo

**Super classes**

```
ows4R::OGCAbstractObject -> ows4R::OGCExpression -> ows4R::BinaryComparisonOpType
-> PropertyIsGreaterThanOrEqualTo
```

**Methods****Public methods:**

- [PropertyIsGreaterThanOrEqualTo\\$new\(\)](#)
- [PropertyIsGreaterThanOrEqualTo\\$clone\(\)](#)

**Method** `new()`: Initializes an object extending [PropertyIsGreaterThanOrEqualTo](#)

*Usage:*

```
PropertyIsGreaterThanOrEqualTo$new(PropertyName, Literal, matchCase = NA)
```

*Arguments:*

```
PropertyName property name
Literal literal
matchCase match case
```

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

```
PropertyIsGreaterThanOrEqualTo$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

**Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

**Examples**

```
expr <- PropertyIsGreaterThanOrEqualTo$new(PropertyName = "property", Literal = "value")
expr_xml <- expr$encode() #see how it looks like in XML
```

---

PropertyIsLessThan      *PropertyIsLessThan*

---

**Description**

PropertyIsLessThan

PropertyIsLessThan

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) for modelling an PropertyIsLessThan

**Super classes**

```
ows4R::OGCAbstractObject -> ows4R::OGCExpression -> ows4R::BinaryComparisonOpType
-> PropertyIsLessThan
```

**Methods****Public methods:**

- [PropertyIsLessThan\\$new\(\)](#)
- [PropertyIsLessThan\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes an object extending [PropertyIsLessThan](#)

*Usage:*

```
PropertyIsLessThan$new(PropertyName, Literal, matchCase = NA)
```

*Arguments:*

PropertyName property name  
 Literal literal  
 matchCase match case

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

PropertyIsLessThan\$clone(deep = FALSE)

*Arguments:*

deep Whether to make a deep clone.

### Author(s)

Emmanuel Blondel <emmanuel.blondell@gmail.com>

### Examples

```
expr <- PropertyIsLessThan$new(PropertyName = "property", Literal = "value")
expr_xml <- expr$encode() #see how it looks like in XML
```

---

PropertyIsLessThanOrEqualTo  
*PropertyIsLesserThanOrEqualTo*

---

### Description

PropertyIsLesserThanOrEqualTo  
 PropertyIsLesserThanOrEqualTo

### Format

[R6Class](#) object.

### Value

Object of [R6Class](#) for modelling an PropertyIsLesserThanOrEqualTo

### Super classes

[ows4R::OGCAbstractObject](#) -> [ows4R::OGCExpression](#) -> [ows4R::BinaryComparisonOpType](#)  
 -> PropertyIsLessThanOrEqualTo

**Methods****Public methods:**

- [PropertyIsLessThanOrEqualTo\\$new\(\)](#)
- [PropertyIsLessThanOrEqualTo\\$clone\(\)](#)

**Method** `new()`: Initializes an object extending [PropertyIsLessThanOrEqualTo](#)

*Usage:*

```
PropertyIsLessThanOrEqualTo$new(PropertyName, Literal, matchCase = NA)
```

*Arguments:*

PropertyName property name

Literal literal

matchCase match case

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

```
PropertyIsLessThanOrEqualTo$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

**Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

**Examples**

```
expr <- PropertyIsLessThanOrEqualTo$new(PropertyName = "property", Literal = "value")
expr_xml <- expr$encode() #see how it looks like in XML
```

---

PropertyIsLike

*PropertyIsLike*

---

**Description**

PropertyIsLike

PropertyIsLike

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) for modelling an PropertyIsLike

**Super classes**

`ows4R::OGCAbstractObject` -> `ows4R::OGCEXpression` -> `PropertyIsLike`

**Public fields**

`PropertyName` property name field for XML encoding

`Literal` literal field for XML encoding

`attrs` attributes for XML encoding

**Methods****Public methods:**

- `PropertyIsLike$new()`
- `PropertyIsLike$clone()`

**Method** `new()`: Initializes an object extending `PropertyIsLike`

*Usage:*

```
PropertyIsLike$new(
  PropertyName,
  Literal,
  escapeChar = "\\\"",
  singleChar = "_",
  wildCard = "%",
  matchCase = NA
)
```

*Arguments:*

`PropertyName` property name

`Literal` literal

`escapeChar` escape character. Default is "\"

`singleChar` single character. Default is "\_"

`wildCard` wildcard

`matchCase` match case

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

```
PropertyIsLike$clone(deep = FALSE)
```

*Arguments:*

`deep` Whether to make a deep clone.

**Author(s)**

Emmanuel Blondel <emmanuel.blondell@gmail.com>

**Examples**

```
expr <- PropertyIsLike$new(PropertyName = "property", Literal = "value")
expr_xml <- expr$encode() #see how it looks like in XML
```



---

PropertyIsNotEqualTo *PropertyIsNotEqualTo*

---

### Description

PropertyIsNotEqualTo

PropertyIsNotEqualTo

### Format

[R6Class](#) object.

### Value

Object of [R6Class](#) for modelling an PropertyIsNotEqualTo

### Super classes

[ows4R::OGCAbstractObject](#) -> [ows4R::OGCExpression](#) -> [ows4R::BinaryComparisonOpType](#)  
-> [PropertyIsNotEqualTo](#)

### Methods

#### Public methods:

- [PropertyIsNotEqualTo\\$new\(\)](#)
- [PropertyIsNotEqualTo\\$clone\(\)](#)

**Method** `new()`: Initializes an object extending [PropertyIsNotEqualTo](#)

*Usage:*

```
PropertyIsNotEqualTo$new(PropertyName, Literal, matchCase = NA)
```

*Arguments:*

PropertyName property name

Literal literal

matchCase match case

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

```
PropertyIsNotEqualTo$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

### Author(s)

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

**Examples**

```
expr <- PropertyIsNotEqualTo$new(PropertyName = "property", Literal = "value")
expr_xml <- expr$encode() #see how it looks like in XML
```

---

PropertyIsNull	<i>PropertyIsNull</i>
----------------	-----------------------

---

**Description**

PropertyIsNull

PropertyIsNull

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) for modelling an PropertyIsNull

**Super classes**

[ows4R::OGCAbstractObject](#) -> [ows4R::OGCExpression](#) -> PropertyIsNull

**Public fields**

PropertyName property name field for XML encoding

**Methods****Public methods:**

- [PropertyIsNull\\$new\(\)](#)
- [PropertyIsNull\\$clone\(\)](#)

**Method** `new()`: Initializes an object extending [PropertyIsLike](#)

*Usage:*

```
PropertyIsNull$new(PropertyName)
```

*Arguments:*

PropertyName property name

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

```
PropertyIsNull$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

**Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

**Examples**

```
expr <- PropertyIsNull$new(PropertyName = "property")
expr_xml <- expr$encode() #see how it looks like in XML
```

---

registerOWSNamespace    *registerOWSNamespace*

---

**Description**

registerOWSNamespace allows to register a new namespace in **ows4R**

**Usage**

```
registerOWSNamespace(id, uri, force)
```

**Arguments**

id	prefix of the namespace
uri	URI of the namespace
force	logical parameter indicating if registration has to be forced in case the identified namespace is already registered

**Author(s)**

Emmanuel Blondel, <emmanuel.blondel1@gmail.com>

**Examples**

```
registerOWSNamespace(id = "myprefix", uri = "http://someuri")
```

---

setOWSNamespace    *setOWSNamespace*

---

**Description**

setOWSNamespace

**Usage**

```
setOWSNamespace()
```

---

UnaryLogicOpType	<i>UnaryLogicOpType</i>
------------------	-------------------------

---

**Description**

UnaryLogicOpType

UnaryLogicOpType

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) for modelling an UnaryLogicOpType

**Super classes**

[ows4R::OGCAbstractObject](#) -> [ows4R::OGCEXpression](#) -> UnaryLogicOpType

**Public fields**

operations a list OGC expressions

**Methods****Public methods:**

- [UnaryLogicOpType\\$new\(\)](#)
- [UnaryLogicOpType\\$setExprVersion\(\)](#)
- [UnaryLogicOpType\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes a [UnaryLogicOpType](#) expression

*Usage:*

`UnaryLogicOpType$new(..., element, namespacePrefix, exprVersion = "1.1.0")`

*Arguments:*

... list of objects of class [OGCEXpression](#)

element element

namespacePrefix namespacePrefix

exprVersion OGC expression version. Default is "1.1.0"

**Method** [setExprVersion\(\)](#): Sets expression version. The methods will control that expression versions are set for each of the operations specified in the expression.

*Usage:*

`UnaryLogicOpType$setExprVersion(exprVersion)`

*Arguments:*

exprVersion OGC expression version

**Method clone():** The objects of this class are cloneable with this method.

*Usage:*

UnaryLogicOpType\$clone(deep = FALSE)

*Arguments:*

deep Whether to make a deep clone.

### Note

abstract super class of all the unary logical operation classes

---

WCSCapabilities	<i>WCSCapabilities</i>
-----------------	------------------------

---

### Description

WCSCapabilities

WCSCapabilities

### Format

[R6Class](#) object.

### Value

Object of [R6Class](#) with methods for interfacing an OGC Web Coverage Service Get Capabilities document.

### Super classes

[ows4R::OGCAbstractObject](#) -> [ows4R::OWSCapabilities](#) -> WCSCapabilities

### Methods

#### Public methods:

- [WCSCapabilities\\$new\(\)](#)
- [WCSCapabilities\\$getCoverageSummaries\(\)](#)
- [WCSCapabilities\\$findCoverageSummaryById\(\)](#)
- [WCSCapabilities\\$clone\(\)](#)

**Method new():** Initializes a [WCSCapabilities](#) object

*Usage:*

WCSCapabilities\$new(url, version, client = NULL, logger = NULL, ...)

*Arguments:*

url url  
 version version  
 client an object of class [WCSCClient](#)  
 logger logger type NULL, "INFO" or "DEBUG"  
 ... any other parameter to pass to [OWSGetCapabilities](#) service request

**Method** `getCoverageSummaries()`: Get coverage summaries

*Usage:*

`WCSCapabilities$getCoverageSummaries()`

*Returns:* a list of [WCSCoverageSummary](#) objects

**Method** `findCoverageSummaryById()`: Finds a coverage by name

*Usage:*

`WCSCapabilities$findCoverageSummaryById(expr, exact = FALSE)`

*Arguments:*

expr expr

exact exact matching? Default is TRUE

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

`WCSCapabilities$clone(deep = FALSE)`

*Arguments:*

deep Whether to make a deep clone.

### Author(s)

Emmanuel Blondel <emmanuel.blondell@gmail.com>

### Examples

```
## Not run:
  WCSCapabilities$new("http://localhost:8080/geoserver/wcs", serviceVersion = "2.0.1")

## End(Not run)
```

---

WCSCient

*WCSCient*

---

### Description

WCSCient

WCSCient

### Format

[R6Class](#) object.

### Value

Object of [R6Class](#) with methods for interfacing an OGC Web Coverage Service.

### Super classes

[ows4R::OGCAbstractObject](#) -> [ows4R::OWSCient](#) -> WCSCient

### Methods

#### Public methods:

- [WCSCient\\$new\(\)](#)
- [WCSCient\\$getCapabilities\(\)](#)
- [WCSCient\\$reloadCapabilities\(\)](#)
- [WCSCient\\$describeCoverage\(\)](#)
- [WCSCient\\$getCoverage\(\)](#)
- [WCSCient\\$clone\(\)](#)

**Method** `new()`: This method is used to instantiate a [WCSCient](#) with the url of the OGC service. Authentication is supported using basic auth (using user/pwd arguments), bearer token (using token argument), or custom (using headers argument). By default, the logger argument will be set to NULL (no logger). This argument accepts two possible values: INFO: to print only **ows4R** logs, DEBUG: to print more verbose logs

*Usage:*

```
WCSCient$new(  
  url,  
  serviceVersion = NULL,  
  user = NULL,  
  pwd = NULL,  
  token = NULL,  
  headers = c(),  
  config = httr::config(),  
  cas_url = NULL,  
  logger = NULL  
)
```

*Arguments:*

url url  
 serviceVersion WFS service version  
 user user  
 pwd password  
 token token  
 headers headers  
 config config  
 cas\_url Central Authentication Service (CAS) URL  
 logger logger

**Method** `getCapabilities()`: Get WCS capabilities

*Usage:*

```
WCSClient$getCapabilities()
```

*Returns:* an object of class [WCSCapabilities](#)

**Method** `reloadCapabilities()`: Reloads WCS capabilities

*Usage:*

```
WCSClient$reloadCapabilities()
```

**Method** `describeCoverage()`: Describes coverage

*Usage:*

```
WCSClient$describeCoverage(identifier)
```

*Arguments:*

identifier identifier

*Returns:* an object of class [WCSCoverageDescription](#)

**Method** `getCoverage()`: Get coverage

*Usage:*

```

WCSClient$getCoverage(
  identifier,
  bbox = NULL,
  crs = NULL,
  time = NULL,
  format = NULL,
  rangesubset = NULL,
  gridbaseCRS = NULL,
  gridtype = NULL,
  gridCS = NULL,
  gridorigin = NULL,
  gridoffsets = NULL,
  method = "GET",
  filename = NULL,
  ...
)

```



*Arguments:*

**identifier** Coverage identifier. Object of class character  
**bbox** bbox. Object of class matrix. Default is NULL. eg. `OWSUtils$toBBOX(-180,180,-90,90)`  
**crs** crs. Object of class character giving the CRS identifier (EPSG prefixed code, or URI/URN). Default is NULL.  
**time** time. Object of class character representing time instant/period. Default is NULL  
**format** format. Object of class character Default will be GeoTIFF, coded differently depending on the WCS version.  
**rangesubset** rangesubset. Default is NULL  
**gridbaseCRS** grid base CRS. Default is NULL  
**gridtype** grid type. Default is NULL  
**gridCS** grid CS. Default is NULL  
**gridorigin** grid origin. Default is NULL  
**gridoffsets** grid offsets. Default is NULL  
**method** method to get coverage, either 'GET' or 'POST' (experimental - under development). Object of class character.  
**filename** filename. Object of class character. Optional filename to download the coverage ... any other argument to [WCSGetCoverage](#)  
**elevation** elevation. Object of class character or numeric. Default is NULL

*Returns:* an object of class SpatRaster from **terra**

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

```
WCSClient$clone(deep = FALSE)
```

*Arguments:*

**deep** Whether to make a deep clone.

**Author(s)**

Emmanuel Blondel <emmanuel.blondell@gmail.com>

**Examples**

```
## Not run:
  wcs <- WCSClient$new("http://localhost:8080/geoserver/wcs", serviceVersion = "2.0.1")

## End(Not run)
```

---

WCSCoverage

*WCSCoverage*

---

### Description

WCSCoverage

WCSCoverage

### Format

[R6Class](#) object.

### Value

Object of [R6Class](#) modelling a WCS coverage

### Super class

[ows4R::OGCAbstractObject](#) -> WCSCoverage

### Public fields

description description

### Methods

#### Public methods:

- [WCSCoverage\\$new\(\)](#)
- [WCSCoverage\\$getIdentifier\(\)](#)
- [WCSCoverage\\$getTitle\(\)](#)
- [WCSCoverage\\$getAbstract\(\)](#)
- [WCSCoverage\\$getReference\(\)](#)
- [WCSCoverage\\$getData\(\)](#)
- [WCSCoverage\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes an object of class [WCSCoverage](#)

*Usage:*

```
WCSCoverage$new(xmlObj, serviceVersion, owsVersion, logger = NULL)
```

*Arguments:*

xmlObj object of class [XMLInternalNode-class](#)

serviceVersion WCS service version

owsVersion OWS version

logger logger

**Method** [getIdentifier\(\)](#): Get identifier

*Usage:*

WCSCoverage\$getIdentifier()

*Returns:* an object of class character

**Method getTitle():** Get title

*Usage:*

WCSCoverage\$title()

*Returns:* an object of class character

**Method getAbstract():** Get abstract

*Usage:*

WCSCoverage\$getAbstract()

*Returns:* an object of class character

**Method getReference():** Get reference

*Usage:*

WCSCoverage\$getReference()

*Returns:* an object of class character

**Method getData():** Get data

*Usage:*

WCSCoverage\$getData(filename = NULL)

*Arguments:*

filename filename. Optional file name where to download the coverage

*Returns:* an object of class SpatRaster from **terra**

**Method clone():** The objects of this class are cloneable with this method.

*Usage:*

WCSCoverage\$clone(deep = FALSE)

*Arguments:*

deep Whether to make a deep clone.

#### **Note**

Class used internally by ows4R.

#### **Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

WCSCoverageDescription

*WCSCoverageDescription*

---

### Description

WCSCoverageDescription

WCSCoverageDescription

### Format

[R6Class](#) object.

### Value

Object of [R6Class](#) modelling a WCS coverage summary

### Super classes

[geometa::geometaLogger](#) -> [geometa::ISOAbstractObject](#) -> [geometa::GMLAbstractObject](#)  
 -> [geometa::GMLAbstractFeature](#) -> [geometa::GMLAbstractCoverage](#) -> [geometa::GMLCOVAbstractCoverage](#)  
 -> [WCSCoverageDescription](#)

### Public fields

CoverageId coverage ID

SupportedCRS supported CRS

SupportedFormat supported Format

Domain domain

Range range

ServiceParameters service parmaeters

### Methods

#### Public methods:

- [WCSCoverageDescription\\$new\(\)](#)
- [WCSCoverageDescription\\$getId\(\)](#)
- [WCSCoverageDescription\\$getSupportedCRS\(\)](#)
- [WCSCoverageDescription\\$getSupportedFormats\(\)](#)
- [WCSCoverageDescription\\$getDomain\(\)](#)
- [WCSCoverageDescription\\$getRange\(\)](#)
- [WCSCoverageDescription\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes an object of class [WCSCoverageDescription](#)

*Usage:*

WCSCoverageDescription\$new(xmlObj, serviceVersion, owsVersion, logger = NULL)

*Arguments:*

xmlObj an object of class [XMLInternalNode-class](#) to initialize from XML  
serviceVersion service version  
owsVersion OWS version  
logger logger

**Method** getId(): getId*Usage:*

WCSCoverageDescription\$getId()

*Returns:* the coverage id, object of class character

**Method** getSupportedCRS(): getSupported CRS. Applies to WCS 1 coverage descriptions*Usage:*

WCSCoverageDescription\$getSupportedCRS()

**Method** getSupportedFormats(): get supported formats. Applies to WCS 1 coverage descriptions*Usage:*

WCSCoverageDescription\$getSupportedFormats()

**Method** getDomain(): get domain. Applies to WCS 1 coverage descriptions*Usage:*

WCSCoverageDescription\$getDomain()

**Method** getRange(): get range. Applies to WCS 1.0 coverage descriptions*Usage:*

WCSCoverageDescription\$getRange()

**Method** clone(): The objects of this class are cloneable with this method.*Usage:*

WCSCoverageDescription\$clone(deep = FALSE)

*Arguments:*

deep Whether to make a deep clone.

**Note**

Class used internally by ows4R.

**Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

WCSCoverageDomain	<i>WCSCoverageDomain</i>
-------------------	--------------------------

---

**Description**

WCSCoverageDomain

WCSCoverageDomain

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) modelling a WCS coverage domain

**Super class**

[ows4R::OGCAbstractObject](#) -> WCSCoverageDomain

**Public fields**

spatialDomain spatial domain

temporalDomain temporal domain

**Methods****Public methods:**

- [WCSCoverageDomain\\$new\(\)](#)
- [WCSCoverageDomain\\$getSpatialDomain\(\)](#)
- [WCSCoverageDomain\\$getTemporalDomain\(\)](#)
- [WCSCoverageDomain\\$clone\(\)](#)

**Method new():** Initializes an object of class [WCSCoverageDomain](#)

*Usage:*

```
WCSCoverageDomain$new(xmlObj, serviceVersion, owsVersion, logger = NULL)
```

*Arguments:*

xmlObj an object of class [XMLInternalNode-class](#) to initialize from XML

serviceVersion service version

owsVersion OWS version

logger logger

**Method getSpatialDomain():** Get spatial domain

*Usage:*

```
WCSCoverageDomain$getSpatialDomain()
```

*Returns:* object of class [WCSCoverageSpatialDomain](#)

**Method** `getTemporalDomain()`: Get spatial domain

*Usage:*

`WCSCoverageDomain$getTemporalDomain()`

*Returns:* object of class [WCSCoverageTemporalDomain](#)

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

`WCSCoverageDomain$clone(deep = FALSE)`

*Arguments:*

`deep` Whether to make a deep clone.

### Note

Class used internally by ows4R.

### Author(s)

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

WCSCoverageFilenameHandler

*WCSCoverageFilenameHandler*

---

### Description

WCSCoverageFilenameHandler provides a coverage filename handler for coverage download

### Usage

`WCSCoverageFilenameHandler(identifier, time, elevation, bbox, format)`

### Arguments

<code>identifier</code>	coverage identifier
<code>time</code>	time
<code>elevation</code>	elevation
<code>bbox</code>	bbox
<code>format</code>	format

### Value

the filename to use for coverage download

### Author(s)

Emmanuel Blondel, <emmanuel.blondel1@gmail.com>

---

WCSCoverageSpatialDomain

*WCSCoverageSpatialDomain*

---

### Description

WCSCoverageSpatialDomain

WCSCoverageSpatialDomain

### Format

[R6Class](#) object.

### Value

Object of [R6Class](#) modelling a WCS coverage spatial domain

### Super class

[ows4R: :OGCAbstractObject](#) -> WCSCoverageSpatialDomain

### Public fields

envelopes envelopes. For WCS 1.0

BoundingBox bounding box. For WCS 1.1

grids For WCS 1.0

GridCRS grid CRS. For WCS 1.1

### Methods

#### Public methods:

- [WCSCoverageSpatialDomain\\$new\(\)](#)
- [WCSCoverageSpatialDomain\\$getEnvelopes\(\)](#)
- [WCSCoverageSpatialDomain\\$getBoundingBox\(\)](#)
- [WCSCoverageSpatialDomain\\$getGrids\(\)](#)
- [WCSCoverageSpatialDomain\\$getGridCRS\(\)](#)
- [WCSCoverageSpatialDomain\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes an object of class [WCSCoverageDomain](#)

*Usage:*

```
WCSCoverageSpatialDomain$new(xmlObj, serviceVersion, owsVersion, logger = NULL)
```

*Arguments:*

xmlObj an object of class [XMLInternalNode-class](#) to initialize from XML

serviceVersion service version



owsVersion OWS version

logger logger

**Method** getEnvelopes(): Get envelopes. Method that applies to WCS 1.0 only

*Usage:*

WCSCoverageSpatialDomain\$getEnvelopes()

*Returns:* a list of objects of class [GMLEnvelope](#) or [GMLEnvelopeWithTimePeriod](#)

**Method** getBoundingBox(): Get bounding boxes. Method that applies to WCS 1.1 only

*Usage:*

WCSCoverageSpatialDomain\$getBoundingBox()

*Returns:* a list of objects of class [OWSBoundingBox](#)

**Method** getGrids(): Get grids. Method that applies to WCS 1.0 only

*Usage:*

WCSCoverageSpatialDomain\$getGrids()

*Returns:* a list of objects of class [GMLGrid](#) or [GMLRectifiedGrid](#)

**Method** getGridCRS(): Get Grid CRS. Method that applies to WCS 1.1 only

*Usage:*

WCSCoverageSpatialDomain\$getGridCRS()

*Returns:* a list of objects of class [WCSGridCRS](#)

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

WCSCoverageSpatialDomain\$clone(deep = FALSE)

*Arguments:*

deep Whether to make a deep clone.

#### Note

Class used internally by ows4R.

#### Author(s)

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

WCSCoverageSummary      *WCSCoverageSummary*

---

### Description

WCSCoverageSummary

WCSCoverageSummary

### Format

[R6Class](#) object.

### Value

Object of [R6Class](#) modelling a WCS coverage summary

### Super class

[ows4R: :OGCAbstractObject](#) -> WCSCoverageSummary

### Public fields

CoverageId coverage id

CoverageSubtype coverage subtype

CoverageSubtypeParent coverage subtype parent

WGS84BoundingBox WGS84 bounding box

BoundingBox bounding box

### Methods

#### Public methods:

- [WCSCoverageSummary\\$new\(\)](#)
- [WCSCoverageSummary\\$getId\(\)](#)
- [WCSCoverageSummary\\$getSubtype\(\)](#)
- [WCSCoverageSummary\\$getSubtypeParent\(\)](#)
- [WCSCoverageSummary\\$getWGS84BoundingBox\(\)](#)
- [WCSCoverageSummary\\$getBoundingBox\(\)](#)
- [WCSCoverageSummary\\$getDescription\(\)](#)
- [WCSCoverageSummary\\$getDimensions\(\)](#)
- [WCSCoverageSummary\\$getCoverage\(\)](#)
- [WCSCoverageSummary\\$getCoverageStack\(\)](#)
- [WCSCoverageSummary\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes a [WCSCoverageSummary](#) object

*Usage:*

```
WCSCoverageSummary$new(  
  xmlObj,  
  capabilities,  
  serviceVersion,  
  owsVersion,  
  logger = NULL  
)
```

*Arguments:*

xmlObj object of class [XMLInternalNode-class](#) from **XML**  
capabilities object of class [WCSCapabilities](#)  
serviceVersion WCS service version  
owsVersion version  
logger logger type NULL, "INFO" or "DEBUG"

**Method getId():** Get coverage ID*Usage:*

```
WCSCoverageSummary$getId()
```

*Returns:* an object of class character

**Method getSubtype():** Get sub type*Usage:*

```
WCSCoverageSummary$getSubtype()
```

*Returns:* an object of class character

**Method getSubtypeParent():** Get sub type parent*Usage:*

```
WCSCoverageSummary$getSubtypeParent()
```

*Returns:* an object of class character

**Method getWGS84BoundingBox():** Get bounding box*Usage:*

```
WCSCoverageSummary$getWGS84BoundingBox()
```

*Returns:* an object of class [OWSWGS84BoundingBox](#)

**Method getBoundingBox():** Get WGS84 bounding box*Usage:*

```
WCSCoverageSummary$getBoundingBox()
```

*Returns:* an object of class [OWSBoundingBox](#)

**Method getDescription():** Get description*Usage:*

```
WCSCoverageSummary$getDescription()
```

*Returns:* an object of class [WCSCoverageDescription](#)

**Method** `getDimensions()`: Get dimensions

*Usage:*

```
WCSCoverageSummary$getDimensions()
```

*Returns:* the list of dimensions

**Method** `getCoverage()`: Get coverage data

*Usage:*

```
WCSCoverageSummary$getCoverage(
  bbox = NULL,
  crs = NULL,
  time = NULL,
  elevation = NULL,
  format = NULL,
  rangesubset = NULL,
  gridbaseCRS = NULL,
  gridtype = NULL,
  gridCS = NULL,
  gridorigin = NULL,
  gridoffsets = NULL,
  method = "GET",
  filename = NULL,
  ...
)
```

*Arguments:*

`bbox` `bbox`. Object of class `matrix`. Default is `NULL`. eg. `OWSUtils$toBBOX(-180,180,-90,90)`

`crs` `crs`. Object of class `character` giving the CRS identifier (EPSG prefixed code, or URI/URN). Default is `NULL`.

`time` `time`. Object of class `character` representing time instant/period. Default is `NULL`

`elevation` `elevation`. Object of class `character` or `numeric`. Default is `NULL`

`format` `format`. Object of class `character` Default will be `GeoTIFF`, coded differently depending on the `WCS` version.

`rangesubset` `rangesubset`. Default is `NULL`

`gridbaseCRS` `grid base CRS`. Default is `NULL`

`gridtype` `grid type`. Default is `NULL`

`gridCS` `grid CS`. Default is `NULL`

`gridorigin` `grid origin`. Default is `NULL`

`gridoffsets` `grid offsets`. Default is `NULL`

`method` `method` to get coverage, either `'GET'` or `'POST'` (experimental - under development). Object of class `character`.

`filename` `filename`. Object of class `character`. Optional filename to download the coverage

`...` any other argument to [WCSGetCoverage](#)

*Returns:* an object of class `SpatRaster` from **terra**

**Method** `getCoverageStack()`: Get a spatio-temporal coverage data cubes as coverage [stack](#)

*Usage:*

```
WCSCoverageSummary$getCoverageStack(  
  time = NULL,  
  elevation = NULL,  
  bbox = NULL,  
  filename_handler = NULL,  
  ...  
)
```

*Arguments:*

time time

elevation elevation

bbox bbox

filename\_handler Optional filename handling function with arguments 'identifier', 'time', 'elevation', 'bbox', 'format' See [WCSCoverageFilenameHandler](#) as generic filename handler that can be used.

... any other parameter to pass to `getCoverage`

*Returns:* an object of class [stack](#) from **raster**

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

```
WCSCoverageSummary$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

## Note

Class used internally by ows4R.

## Author(s)

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

WCSCoverageTemporalDomain

*WCSCoverageTemporalDomain*

---

## Description

WCSCoverageTemporalDomain

WCSCoverageTemporalDomain

## Format

[R6Class](#) object.

**Value**

Object of [R6Class](#) modelling a WCS coverage temporal domain

**Super class**

[ows4R: :OGCAbstractObject](#) -> WCSCoverageTemporalDomain

**Public fields**

instants instants

periods periods

**Methods****Public methods:**

- [WCSCoverageTemporalDomain\\$new\(\)](#)
- [WCSCoverageTemporalDomain\\$getInstants\(\)](#)
- [WCSCoverageTemporalDomain\\$getPeriods\(\)](#)
- [WCSCoverageTemporalDomain\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes an object of class [WCSCoverageTemporalDomain](#)

*Usage:*

```
WCSCoverageTemporalDomain$new(
  xmlObj,
  serviceVersion,
  owsVersion,
  logger = NULL
)
```

*Arguments:*

xmlObj an object of class [XMLInternalNode-class](#) to initialize from XML  
 serviceVersion service version  
 owsVersion OWS version  
 logger logger

**Method** [getInstants\(\)](#): Get time instants

*Usage:*

```
WCSCoverageTemporalDomain$getInstants()
```

*Returns:* a list of objects of class [POSIXct](#)

**Method** [getPeriods\(\)](#): Get time periods

*Usage:*

```
WCSCoverageTemporalDomain$getPeriods()
```

*Returns:* a list of objects of class [GMLTimePeriod](#)

**Method** [clone\(\)](#): The objects of this class are cloneable with this method.

*Usage:*

```
WCSCoverageTemporalDomain$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

**Note**

Class used internally by ows4R.

**Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

WCSDescribeCoverage    *WCSDescribeCoverage*

---

**Description**

WCSDescribeCoverage

WCSDescribeCoverage

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) for modelling a WCS DescribeCoverage request

**Super classes**

[ows4R::OGCAbstractObject](#) -> [ows4R::OWSHttpRequest](#) -> WCSDescribeCoverage

**Methods****Public methods:**

- [WCSDescribeCoverage\\$new\(\)](#)
- [WCSDescribeCoverage\\$clone\(\)](#)

**Method** `new()`: Initializes a [WCSDescribeCoverage](#) service request

*Usage:*

```

WCSDescribeCoverage$new(
  capabilities,
  op,
  url,
  serviceVersion,
  coverageId,
  user = NULL,
  pwd = NULL,
  token = NULL,
  headers = c(),
  config = httr::config(),
  logger = NULL,
  ...
)

```

*Arguments:*

*capabilities* an object of class [WCSCapabilities](#)  
*op* object of class [OWSOperation](#) as retrieved from capabilities  
*url* url  
*serviceVersion* serviceVersion  
*coverageId* coverage ID  
*user* user  
*pwd* password  
*token* token  
*headers* headers  
*config* config  
*logger* logger  
*...* any parameter to pass to the service request

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

```
WCSDescribeCoverage$clone(deep = FALSE)
```

*Arguments:*

*deep* Whether to make a deep clone.

**Note**

Class used internally by **ows4R** to trigger a WCS DescribeCoverage request

**Author(s)**

Emmanuel Blondel <emmanuel.blondell@gmail.com>



---

WCSGetCoverage	<i>WCSGetCoverage</i>
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---

**Description**

WCSGetCoverage

WCSGetCoverage

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) for modelling a WCS GetCoverage request

**Super classes**

[ows4R::OGCAbstractObject](#) -> [ows4R::OWSHttpRequest](#) -> WCSGetCoverage

**Public fields**

CoverageId coverage identifier

format coverage format

**Methods****Public methods:**

- [WCSGetCoverage\\$new\(\)](#)
- [WCSGetCoverage\\$clone\(\)](#)

**Method new():** Initializes a [WCSGetCoverage](#) service request

*Usage:*

```
WCSGetCoverage$new(  
  capabilities,  
  op,  
  url,  
  serviceVersion,  
  coverage,  
  envelope = NULL,  
  crs = NULL,  
  time = NULL,  
  elevation = NULL,  
  format = NULL,  
  rangesubset = NULL,  
  gridbaseCRS = NULL,
```

```

    gridtype = NULL,
    gridCS = NULL,
    gridorigin = NULL,
    gridoffsets = NULL,
    user = NULL,
    pwd = NULL,
    token = NULL,
    headers = c(),
    config = httr::config(),
    method = "GET",
    logger = NULL,
    ...
)

```

*Arguments:*

*capabilities* an object of class [WCSCapabilities](#)  
*op* object of class [OWSOperation](#) as retrieved from capabilities  
*url* url  
*serviceVersion* serviceVersion  
*coverage* coverage, object of class [WCSCoverageSummary](#)  
*envelope* envelope  
*crs* crs  
*time* time  
*elevation* elevation  
*format* format  
*rangesubset* range subset  
*gridbaseCRS* grid base CRS  
*gridtype* grid type  
*gridCS* grid CS  
*gridorigin* grid origin  
*gridoffsets* grid offsets  
*user* user  
*pwd* password  
*token* token  
*headers* headers  
*config* config  
*method* method  
*logger* logger  
 ... any parameter to pass to the service request

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

```
WCSGetCoverage$clone(deep = FALSE)
```

*Arguments:*

*deep* Whether to make a deep clone.

**Note**

Class used internally by **ows4R** to trigger a WCS GetCoverage request

**Author(s)**

Emmanuel Blondel <emmanuel.blondell@gmail.com>

---

WCSGridCRS

*WCSGridCRS*

---

**Description**

WCSGridCRS

WCSGridCRS

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) modelling a WCS grid CRS

**Super class**

[ows4R::OGCAbstractObject](#) -> WCSGridCRS

**Public fields**

GridBaseCRS grid base CRS

GridType grid type

GridOrigin grid origin

GridOffsets grid offsets

GridCS grid CS

**Methods****Public methods:**

- [WCSGridCRS\\$new\(\)](#)
- [WCSGridCRS\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes an object of class [WCSGridCRS](#)

*Usage:*

```
WCSGridCRS$new(xmlObj, serviceVersion, owsVersion, logger = NULL)
```

*Arguments:*

xmlObj an object of class [XMLInternalNode-class](#) to initialize from XML  
serviceVersion service version  
owsVersion OWS version  
logger logger

**Method clone():** The objects of this class are cloneable with this method.

*Usage:*

```
WCSGridCRS$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

### Note

Class used internally by ows4R.

### Author(s)

Emmanuel Blondel <emmanuel.blondell@gmail.com>

---

WCSGSElevationDomain *WCSGSElevationDomain*

---

### Description

WCSGSElevationDomain

WCSGSElevationDomain

### Format

[R6Class](#) object.

### Value

Object of [R6Class](#) modelling a WCS geoserver elevation domain object

### Super classes

[geometa::geometaLogger](#) -> [geometa::ISOAbstractObject](#) -> [WCSGSElevationDomain](#)

### Public fields

SingleValue single values

## Methods

### Public methods:

- [WCSGSElevationDomain\\$decode\(\)](#)
- [WCSGSElevationDomain\\$clone\(\)](#)

**Method** `decode()`: Decodes from XML

*Usage:*

```
WCSGSElevationDomain$decode(xml)
```

*Arguments:*

xml object of class [XMLInternalNode-class](#) from **XML**

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

```
WCSGSElevationDomain$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

## Note

Experimental

## Author(s)

Emmanuel Blondel <[emmanuel.blondell@gmail.com](mailto:emmanuel.blondell@gmail.com)>

---

WCSGSTimeDomain

*WCSGSTimeDomain*

---

## Description

WCSGSTimeDomain

WCSGSTimeDomain

## Format

[R6Class](#) object.

## Value

Object of [R6Class](#) modelling a WCS geoserver time domain object

## Super classes

[geometa::geometaLogger](#) -> [geometa::ISOAbstractObject](#) -> [WCSGSTimeDomain](#)

**Public fields**

TimeInstant time instants

**Methods****Public methods:**

- [WCSGSTimeDomain\\$decode\(\)](#)
- [WCSGSTimeDomain\\$clone\(\)](#)

**Method** `decode()`: Decodes from XML

*Usage:*

`WCSGSTimeDomain$decode(xml)`

*Arguments:*

xml object of class [XMLInternalNode-class](#) from **XML**

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

`WCSGSTimeDomain$clone(deep = FALSE)`

*Arguments:*

deep Whether to make a deep clone.

**Note**

Experimental

**Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

WFSCapabilities

*WFSCapabilities*

---

**Description**

WFSCapabilities

WFSCapabilities

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) with methods for interfacing an OGC Web Feature Service Get Capabilities document.

**Super classes**

`ows4R::OGCAbstractObject` -> `ows4R::OWSCapabilities` -> `WFSCapabilities`

**Methods****Public methods:**

- `WFSCapabilities$new()`
- `WFSCapabilities$getFeatureTypes()`
- `WFSCapabilities$findFeatureTypeByName()`
- `WFSCapabilities$clone()`

**Method** `new()`: Initializes a `WFSCapabilities` object

*Usage:*

`WFSCapabilities$new(url, version, logger = NULL, ...)`

*Arguments:*

`url` url

`version` version

`logger` logger type NULL, "INFO" or "DEBUG"

`...` any other parameter to pass to `OWSGetCapabilities` service request

**Method** `getFeatureTypes()`: List the feature types available. If `pretty` is `TRUE`, the output will be an object of class `data.frame`

*Usage:*

`WFSCapabilities$getFeatureTypes(pretty = FALSE)`

*Arguments:*

`pretty` whether the output should be summarized as `data.frame`

*Returns:* a list of `WFSFeatureType` or a `data.frame`

**Method** `findFeatureTypeByName()`: Finds a feature type by name

*Usage:*

`WFSCapabilities$findFeatureTypeByName(expr, exact = TRUE)`

*Arguments:*

`expr` expr

`exact` exact matching? Default is `TRUE`

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

`WFSCapabilities$clone(deep = FALSE)`

*Arguments:*

`deep` Whether to make a deep clone.

**Note**

Class used to read a `WFSCapabilities` document. The use of `WFSClient` is recommended instead to benefit from the full set of capabilities associated to a WFS server.

**Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

WFSCient

*WFSCient*

---

**Description**

WFSCient

WFSCient

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) with methods for interfacing an OGC Web Feature Service.

**Super classes**

[ows4R::OGCAbstractObject](#) -> [ows4R::OWSCient](#) -> WFSCient

**Methods****Public methods:**

- [WFSCient\\$new\(\)](#)
- [WFSCient\\$getCapabilities\(\)](#)
- [WFSCient\\$reloadCapabilities\(\)](#)
- [WFSCient\\$describeFeatureType\(\)](#)
- [WFSCient\\$getFeatures\(\)](#)
- [WFSCient\\$getFeatureTypes\(\)](#)
- [WFSCient\\$clone\(\)](#)

**Method new():** This method is used to instantiate a [WFSCient](#) with the url of the OGC service. Authentication is supported using basic auth (using user/pwd arguments), bearer token (using token argument), or custom (using headers argument). By default, the logger argument will be set to NULL (no logger). This argument accepts two possible values: INFO: to print only **ows4R** logs, DEBUG: to print more verbose logs

*Usage:*

```
WFSCient$new(
  url,
  serviceVersion = NULL,
  user = NULL,
  pwd = NULL,
```



```

    token = NULL,
    headers = c(),
    config = httr::config(),
    cas_url = NULL,
    logger = NULL
  )

```

*Arguments:*

```

url url
serviceVersion WFS service version
user user
pwd password
token token
headers headers
config config
cas_url Central Authentication Service (CAS) URL
logger logger

```

**Method** `getCapabilities()`: Get WFS capabilities

*Usage:*

```
WFSCClient$getCapabilities()
```

*Returns:* an object of class [WFSCapabilities](#)

**Method** `reloadCapabilities()`: Reloads WFS capabilities

*Usage:*

```
WFSCClient$reloadCapabilities()
```

**Method** `describeFeatureType()`: Describes a feature type

*Usage:*

```
WFSCClient$describeFeatureType(typeName)
```

*Arguments:*

```
typeName the name of the feature type
```

*Returns:* a list of [WFSFeatureTypeElement](#)

**Method** `getFeatures()`: Get features

*Usage:*

```
WFSCClient$getFeatures(typeName, ...)
```

*Arguments:*

```
typeName the name of the feature type
```

```
... any other parameter to pass to the WFSGetFeature request
```

*Returns:* features as object of class `sf`

**Method** `getFeatureTypes()`: List the feature types available. If `pretty` is `TRUE`, the output will be an object of class `data.frame`

*Usage:*

```
WFSClient$getFeatureTypes(pretty = FALSE)
```

*Arguments:*

*pretty* whether the output should be summarized as `data.frame`

*Returns:* a list of [WFSFeatureType](#) or a `data.frame`

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

```
WFSClient$clone(deep = FALSE)
```

*Arguments:*

*deep* Whether to make a deep clone.

**Author(s)**

Emmanuel Blondel <emmanuel.blondell@gmail.com>

**Examples**

```
## Not run:
#example based on a WFS endpoint responding at http://localhost:8080/geoserver/wfs
wfs <- WFSClient$new("http://localhost:8080/geoserver/wfs", serviceVersion = "1.1.1")

#get capabilities
caps <- wfs$getCapabilities()

#find feature type
ft <- caps$findFeatureTypeByName("mylayer")
if(length(ft)>0){
  data <- ft$getFeatures()
  data_with_filter <- ft$getFeatures(cql_filter = "somefilter")
}

#Advanced examples at https://github.com/eblondel/ows4R/wiki#wfs

## End(Not run)
```

---

WFSDescribeFeatureType

*WFSDescribeFeatureType*

---

**Description**

WFSDescribeFeatureType

WFSDescribeFeatureType

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) for modelling a WFS DescribeFeatureType request

**Super classes**

[ows4R::OGCAbstractObject](#) -> [ows4R::OWSHttpRequest](#) -> WFSDescribeFeatureType

**Methods****Public methods:**

- [WFSDescribeFeatureType\\$new\(\)](#)
- [WFSDescribeFeatureType\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes a [WFSDescribeFeatureType](#) service request

*Usage:*

```
WFSDescribeFeatureType$new(
  capabilities,
  op,
  url,
  version,
  typeName,
  user = NULL,
  pwd = NULL,
  token = NULL,
  headers = c(),
  config = httr::config(),
  logger = NULL,
  ...
)
```

*Arguments:*

`capabilities` an object of class [WFSCapabilities](#)  
`op` object of class [OWSOperation](#) as retrieved from capabilities  
`url` url  
`version` service version  
`typeName` typeName  
`user` user  
`pwd` pwd  
`token` token  
`headers` headers  
`config` config  
`logger` logger  
`...` any parameter to pass to the service request

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

```
WFSDescribeFeatureType$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

### Note

Abstract class used by **ows4R** to trigger a WFS DescribeFeatureType request

### Author(s)

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

WFSFeatureType

*WFSFeatureType*

---

### Description

WFSFeatureType

WFSFeatureType

### Format

[R6Class](#) object.

### Value

Object of [R6Class](#) modelling a WFS feature type

### Super class

[ows4R::OGCAbstractObject](#) -> WFSFeatureType

### Public fields

description description

features features

## Methods

### Public methods:

- [WFSFeatureType\\$new\(\)](#)
- [WFSFeatureType\\$getName\(\)](#)
- [WFSFeatureType\\$getTitle\(\)](#)
- [WFSFeatureType\\$getAbstract\(\)](#)
- [WFSFeatureType\\$getKeywords\(\)](#)
- [WFSFeatureType\\$getDefaultCRS\(\)](#)
- [WFSFeatureType\\$getBoundingBox\(\)](#)
- [WFSFeatureType\\$getDescription\(\)](#)
- [WFSFeatureType\\$getFeatures\(\)](#)
- [WFSFeatureType\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes an object of class [WFSFeatureType](#)

*Usage:*

```
WFSFeatureType$new(xmlObj, capabilities, version, logger = NULL)
```

*Arguments:*

xmlObj an object of class [XMLInternalNode-class](#) to initialize from XML

capabilities object of class [WFSCapabilities](#)

version service version

logger logger

**Method** [getName\(\)](#): Get feature type name

*Usage:*

```
WFSFeatureType$getName()
```

*Arguments:*

object of class character

**Method** [getTitle\(\)](#): Get feature type title

*Usage:*

```
WFSFeatureType$getTitle()
```

*Arguments:*

object of class character

**Method** [getAbstract\(\)](#): Get feature type abstract

*Usage:*

```
WFSFeatureType$getAbstract()
```

*Arguments:*

object of class character

**Method** [getKeywords\(\)](#): Get feature type keywords

*Usage:*

WFSFeatureType\$getKeywords()

*Arguments:*

object of class character

**Method** getDefaultCRS(): Get feature type default CRS

*Usage:*

WFSFeatureType\$getDefaultCRS()

*Arguments:*

object of class character

**Method** getBoundingBox(): Get feature type bounding box

*Usage:*

WFSFeatureType\$getBoundingBox()

*Arguments:*

object of class matrix

**Method** getDescription(): Describes a feature type

*Usage:*

WFSFeatureType\$getDescription(pretty = FALSE)

*Arguments:*

pretty pretty whether to return a prettified data.frame. Default is FALSE

*Returns:* a list of [WFSFeatureTypeElement](#) or data.frame

**Method** getFeatures(): Get features

*Usage:*

```
WFSFeatureType$getFeatures(
  ...,
  outputFormat = NULL,
  paging = FALSE,
  paging_length = 1000,
  parallel = FALSE,
  parallel_handler = NULL,
  cl = NULL
)
```

*Arguments:*

... any other parameter to pass to the [WFSGetFeature](#) request

outputFormat output format

paging paging. Default is FALSE

paging\_length number of features to request per page. Default is 1000

parallel whether to get features using parallel multicore strategy. Default is FALSE

parallel\_handler Handler function to parallelize the code. eg [mclapply](#)

cl optional cluster object for parallel cluster approaches using eg. `parallel::makeCluster`

typeName the name of the feature type

*Returns:* features as object of class sf

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

```
WFSFeatureTypeElement.clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

### Note

Class used internally by **ows4R** to trigger a WFS DescribeFeatureType request

### Author(s)

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

WFSFeatureTypeElement *WFSFeatureTypeElement*

---

### Description

WFSFeatureTypeElement

WFSFeatureTypeElement

### Format

[R6Class](#) object.

### Value

Object of [R6Class](#) modelling a WFS feature type element

### Methods

#### Public methods:

- [WFSFeatureTypeElement\\$new\(\)](#)
- [WFSFeatureTypeElement\\$getMinOccurs\(\)](#)
- [WFSFeatureTypeElement\\$getMaxOccurs\(\)](#)
- [WFSFeatureTypeElement\\$isNillable\(\)](#)
- [WFSFeatureTypeElement\\$name\(\)](#)
- [WFSFeatureTypeElement\\$type\(\)](#)
- [WFSFeatureTypeElement\\$clone\(\)](#)

**Method** new(): Initializes a [WFSFeatureTypeElement](#)

*Usage:*

WFSFeatureTypeElement\$new(xmlObj)

*Arguments:*

xmlObj object of class [XMLInternalNode-class](#) from **XML**

**Method** getMinOccurs(): get min occurs

*Usage:*

WFSFeatureTypeElement\$getMinOccurs()

*Returns:* an object of class character

**Method** getMaxOccurs(): get max occurs

*Usage:*

WFSFeatureTypeElement\$getMaxOccurs()

*Returns:* an object of class character

**Method** isNillable(): get if nillable

*Usage:*

WFSFeatureTypeElement\$isNillable()

*Returns:* an object of class logical

**Method** getName(): get name

*Usage:*

WFSFeatureTypeElement\$getName()

*Returns:* an object of class character

**Method** getType(): get type

*Usage:*

WFSFeatureTypeElement\$getType()

*Returns:* an object of class character

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

WFSFeatureTypeElement\$clone(deep = FALSE)

*Arguments:*

deep Whether to make a deep clone.

#### **Note**

Abstract class used by **ows4R**

#### **Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>



---

WFSGetFeature

*WFSGetFeature*


---

**Description**

WFSGetFeature

WFSGetFeature

**Format**[R6Class](#) object.**Value**Object of [R6Class](#) for modelling a WFS GetFeature request**Super classes**[ows4R::OGCAbstractObject](#) -> [ows4R::OWSHttpRequest](#) -> WFSGetFeature**Methods****Public methods:**

- [WFSGetFeature\\$new\(\)](#)
- [WFSGetFeature\\$clone\(\)](#)

**Method** `new()`: Initializes a [WFSGetFeature](#) service request*Usage:*

```
WFSGetFeature$new(
  capabilities,
  op,
  url,
  version,
  typeName,
  outputFormat = NULL,
  user = NULL,
  pwd = NULL,
  token = NULL,
  headers = c(),
  config = httr::config(),
  logger = NULL,
  ...
)
```

*Arguments:*capabilities an object of class [WFSCapabilities](#)op object of class [OWSOperation](#) as retrieved from capabilities

url url  
 version service version  
 typeName typeName  
 outputFormat output format  
 user user  
 pwd password  
 token token  
 headers headers  
 config config  
 logger logger  
 . . . any parameter to pass to the service request

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

WMSGetFeature\$clone(deep = FALSE)

*Arguments:*

deep Whether to make a deep clone.

#### Note

Class used internally by **ows4R** to trigger a WFS GetFeature request

#### Author(s)

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

WMSCapabilities

*WMSCapabilities*

---

#### Description

WMSCapabilities

WMSCapabilities

#### Format

[R6Class](#) object.

#### Value

Object of [R6Class](#) with methods for interfacing an OGC Web Map Service Get Capabilities document.

#### Super classes

[ows4R::OGCAbstractObject](#) -> [ows4R::OWSCapabilities](#) -> WMSCapabilities

**Methods****Public methods:**

- [WMSCapabilities\\$new\(\)](#)
- [WMSCapabilities\\$getRequests\(\)](#)
- [WMSCapabilities\\$getRequestNames\(\)](#)
- [WMSCapabilities\\$getLayers\(\)](#)
- [WMSCapabilities\\$findLayerByName\(\)](#)
- [WMSCapabilities\\$clone\(\)](#)

**Method** `new()`: Initializes a [WMSCapabilities](#) object

*Usage:*

```
WMSCapabilities$new(url, version, logger = NULL, ...)
```

*Arguments:*

`url` url

`version` version

`logger` logger type NULL, "INFO" or "DEBUG"

`...` any other parameter to pass to [OWSGetCapabilities](#) service request

**Method** `getRequests()`: List the requests available. If `pretty` is TRUE, the output will be an object of class `data.frame`

*Usage:*

```
WMSCapabilities$getRequests(pretty = FALSE)
```

*Arguments:*

`pretty` pretty

*Returns:* a list of [OWSRequest](#) available, or a `data.frame`

**Method** `getRequestNames()`: List the names of requests available.

*Usage:*

```
WMSCapabilities$getRequestNames()
```

*Returns:* object of class `character`

**Method** `getLayers()`: List the layers available. If `pretty` is TRUE, the output will be an object of class `data.frame`

*Usage:*

```
WMSCapabilities$getLayers(pretty = FALSE)
```

*Arguments:*

`pretty` pretty

*Returns:* a list of [WMSLayer](#) available, or a `data.frame`

**Method** `findLayerByName()`: Finds a layer by name

*Usage:*

```
WMSCapabilities$findLayerByName(expr, exact = TRUE)
```

*Arguments:*

expr expr

exact exact matching? Default is TRUE

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

WMSCapabilities\$clone(deep = FALSE)

*Arguments:*

deep Whether to make a deep clone.

**Note**

Class used to read a WMSCapabilities document. The use of WMSClient is recommended instead to benefit from the full set of capabilities associated to a WMS server.

**Author(s)**

Emmanuel Blondel &lt;emmanuel.blondell@gmail.com&gt;

---

WMSClient

*WMSClient*


---

**Description**

WMSClient

WMSClient

**Format**[R6Class](#) object.**Value**Object of [R6Class](#) with methods for interfacing an OGC Web Map Service.**Super classes**[ows4R::OGCAbstractObject](#) -> [ows4R::OWSClient](#) -> WMSClient

**Methods****Public methods:**

- [WMSClient\\$new\(\)](#)
- [WMSClient\\$getCapabilities\(\)](#)
- [WMSClient\\$reloadCapabilities\(\)](#)
- [WMSClient\\$getLayers\(\)](#)
- [WMSClient\\$getMap\(\)](#)
- [WMSClient\\$getFeatureInfo\(\)](#)
- [WMSClient\\$getLegendGraphic\(\)](#)
- [WMSClient\\$clone\(\)](#)

**Method new():** This method is used to instantiate a [WMSClient](#) with the url of the OGC service. Authentication is supported using basic auth (using user/pwd arguments), bearer token (using token argument), or custom (using headers argument). By default, the logger argument will be set to NULL (no logger). This argument accepts two possible values: INFO: to print only **ows4R** logs, DEBUG: to print more verbose logs

*Usage:*

```
WMSClient$new(
  url,
  serviceVersion = NULL,
  user = NULL,
  pwd = NULL,
  token = NULL,
  headers = c(),
  config = httr::config(),
  cas_url = NULL,
  logger = NULL
)
```

*Arguments:*

```
url url
serviceVersion WFS service version
user user
pwd password
token token
headers headers
config config
cas_url Central Authentication Service (CAS) URL
logger logger
```

**Method getCapabilities():** Get WMS capabilities

*Usage:*

```
WMSClient$getCapabilities()
```

*Returns:* an object of class [WMSCapabilities](#)

**Method** reloadCapabilities(): Reloads WFS capabilities

*Usage:*

```
WMSClient$reloadCapabilities()
```

**Method** getLayers(): List the layers available. If pretty is TRUE, the output will be an object of class data.frame

*Usage:*

```
WMSClient$getLayers(pretty = FALSE)
```

*Arguments:*

pretty pretty

*Returns:* a list of [WMSLayer](#) available, or a data.frame

**Method** getMap(): Get map. NOT YET IMPLEMENTED

*Usage:*

```
WMSClient$getMap()
```

**Method** getFeatureInfo(): Get feature info

*Usage:*

```
WMSClient$getFeatureInfo(
  layer,
  srs = NULL,
  styles = NULL,
  feature_count = 1,
  x,
  y,
  width,
  height,
  bbox,
  info_format = "application/vnd.ogc.gml",
  ...
)
```

*Arguments:*

layer layer name

srs srs

styles styles

feature\_count feature count. Default is 1

x x

y y

width width

height height

bbox bbox

info\_format info format. Default is "application/vnd.ogc.gml"

... any other parameter to pass to a [WMSGetFeatureInfo](#) request

*Returns:* an object of class sf given the feature(s)

**Method** getLegendGraphic(): Get legend graphic. NOT YET IMPLEMENTED

*Usage:*

```
WMSClient$getLegendGraphic()
```

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

```
WMSClient$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

### Author(s)

Emmanuel Blondel <emmanuel.blondell@gmail.com>

### Examples

```
## Not run:
#example based on a WMS endpoint responding at http://localhost:8080/geoserver/wms
wms <- WMSClient$new("http://localhost:8080/geoserver/wms", serviceVersion = "1.1.1")

#get capabilities
caps <- wms$getCapabilities()

#get feature info

#Advanced examples at https://github.com/eblondel/ows4R/wiki#wms

## End(Not run)
```

---

WMSGetFeatureInfo

*WMSGetFeatureInfo*

---

### Description

WMSGetFeatureInfo

WMSGetFeatureInfo

### Format

[R6Class](#) object.

### Value

Object of [R6Class](#) for modelling a WMS GetFeatureInfo request

**Super classes**

[ows4R::OGCAbstractObject](#) -> [ows4R::OWSHttpRequest](#) -> WMSGetFeatureInfo

**Methods****Public methods:**

- [WMSGetFeatureInfo\\$new\(\)](#)
- [WMSGetFeatureInfo\\$clone\(\)](#)

**Method** `new()`: Initializes a [WMSGetFeatureInfo](#) service request

*Usage:*

```
WMSGetFeatureInfo$new(
  capabilities,
  op,
  url,
  version,
  layers,
  srs,
  styles,
  feature_count = 1,
  x,
  y,
  width,
  height,
  bbox,
  info_format = "text/xml",
  user = NULL,
  pwd = NULL,
  token = NULL,
  headers = c(),
  config = httr::config(),
  logger = NULL,
  ...
)
```

*Arguments:*

`capabilities` an object of class [WMSCapabilities](#)  
`op` object of class [OWSOperation](#) as retrieved from `capabilities`  
`url` url  
`version` version  
`layers` layers  
`srs` srs  
`styles` styles  
`feature_count` feature count  
`x` x  
`y` y



width width  
height height  
bbox bbox  
info\_format info format  
user user  
pwd pwd  
token token  
headers headers  
config config  
logger logger  
... any parameter to pass to the service request

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

```
WMSGetFeatureInfo$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

#### Note

Class used internally by **ows4R** to trigger a WMS GetFeatureInfo request

#### Author(s)

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

WMSLayer

*WMSLayer*

---

#### Description

WMSLayer

WMSLayer

#### Format

[R6Class](#) object.

#### Value

Object of [R6Class](#) modelling a WMS layer

#### Super class

[ows4R::OGCAbstractObject](#) -> WMSLayer

**Public fields**

description description  
 features features

**Methods****Public methods:**

- [WMSLayer\\$new\(\)](#)
- [WMSLayer\\$getName\(\)](#)
- [WMSLayer\\$getTitle\(\)](#)
- [WMSLayer\\$getAbstract\(\)](#)
- [WMSLayer\\$getKeywords\(\)](#)
- [WMSLayer\\$getDefaultCRS\(\)](#)
- [WMSLayer\\$getBoundingBox\(\)](#)
- [WMSLayer\\$getBoundingBoxSRS\(\)](#)
- [WMSLayer\\$getBoundingBoxCRS\(\)](#)
- [WMSLayer\\$getStyle\(\)](#)
- [WMSLayer\\$getStyleNames\(\)](#)
- [WMSLayer\\$getDimensions\(\)](#)
- [WMSLayer\\$getTimeDimension\(\)](#)
- [WMSLayer\\$getElevationDimension\(\)](#)
- [WMSLayer\\$getFeatureInfo\(\)](#)
- [WMSLayer\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes an object of class [WMSLayer](#)

*Usage:*

`WMSLayer$new(xmlObj, capabilities, version, logger = NULL)`

*Arguments:*

`xmlObj` an object of class [XMLInternalNode-class](#) to initialize from XML  
`capabilities` object of class [WMSCapabilities](#)  
`version` service version  
`logger` logger

**Method** [getName\(\)](#): Get layer name

*Usage:*

`WMSLayer$getName()`

*Returns:* object of class character

**Method** [getTitle\(\)](#): Get layer title

*Usage:*

`WMSLayer$getTitle()`

*Returns:* object of class character

**Method** getAbstract(): Get layer abstract

*Usage:*

WMSLayer\$getAbstract()

*Returns:* object of class character

**Method** getKeywords(): Get layer keywords

*Usage:*

WMSLayer\$getKeywords()

*Returns:* object of class character

**Method** getDefaultCRS(): Get layer default CRS

*Usage:*

WMSLayer\$getDefaultCRS()

*Returns:* object of class character

**Method** getBoundingBox(): Get layer bounding box

*Usage:*

WMSLayer\$getBoundingBox()

*Returns:* object of class matrix

**Method** getBoundingBoxSRS(): Get layer bounding box SRS

*Usage:*

WMSLayer\$getBoundingBoxSRS()

*Returns:* object of class character

**Method** getBoundingBoxCRS(): Get layer bounding box CRS

*Usage:*

WMSLayer\$getBoundingBoxCRS()

*Returns:* object of class character

**Method** getStyles(): Get layer styles

*Usage:*

WMSLayer\$getStyles()

*Returns:* an object of class list

**Method** getStylenames(): Get layer style names

*Usage:*

WMSLayer\$getStylenames()

*Returns:* list of object of class character

**Method** getDimensions(): Get layer dimensions

*Usage:*

WMSLayer\$getDimensions(time\_format = "character")

*Arguments:*

time\_format time format. Default is character

*Returns:* a list including default value and listed possible values

**Method** getTimeDimension(): Get layer TIME dimensions

*Usage:*

```
WMSLayer$getTimeDimension(time_format = "character")
```

*Arguments:*

time\_format time format. Default is character

*Returns:* a list including default value and listed possible values

**Method** getElevationDimension(): Get layer ELEVATION dimensions

*Usage:*

```
WMSLayer$getElevationDimension()
```

*Returns:* a list including default value and listed possible values

**Method** getFeatureInfo(): Get feature info

*Usage:*

```
WMSLayer$getFeatureInfo(
  srs = NULL,
  styles = NULL,
  feature_count = 1,
  x,
  y,
  width,
  height,
  bbox,
  info_format = "text/xml",
  ...
)
```

*Arguments:*

srs srs

styles styles

feature\_count feature count. Default is 1

x x

y y

width width

height height

bbox bbox

info\_format info format. Default is "text/xml"

... any other parameter to pass to a [WMSGetFeatureInfo](#) request

*Returns:* an object of class sf given the feature(s)

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

```
WMSLayer$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

**Note**

Abstract class used by **ows4R**

**Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

WPSBoundingBoxData      *WPSBoundingBoxData*

---

**Description**

WPSBoundingBoxData

WPSBoundingBoxData

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) for modelling an OGC WPS BoundingBox data

**Super classes**

[ows4R::OGCAbstractObject](#) -> [ows4R::OWSBoundingBox](#) -> WPSBoundingBoxData

**Methods****Public methods:**

- [WPSBoundingBoxData\\$new\(\)](#)
- [WPSBoundingBoxData\\$clone\(\)](#)

**Method** `new()`: Initializes an object of class [WPSBoundingBoxData](#)

*Usage:*

```
WPSBoundingBoxData$new(  
  xml = NULL,  
  owsVersion,  
  serviceVersion = "1.0.0",  
  logger = NULL,  
  ...  
)
```

*Arguments:*

xml an object of class [XMLInternalNode-class](#) to initialize from XML  
 owsVersion OWS version  
 serviceVersion WPS service version  
 logger logger  
 ... any other parameter

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

WPSCapabilities.clone(deep = FALSE)

*Arguments:*

deep Whether to make a deep clone.

**Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

WPSCapabilities

*WPSCapabilities*

---

**Description**

WPSCapabilities

WPSCapabilities

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) with methods for interfacing an OGC Web Processing Service (WPS) Get Capabilities document.

**Super classes**

[ows4R::OGCAbstractObject](#) -> [ows4R::OWSCapabilities](#) -> WPSCapabilities

## Methods

### Public methods:

- [WPSCapabilities\\$new\(\)](#)
- [WPSCapabilities\\$getProcesses\(\)](#)
- [WPSCapabilities\\$describeProcess\(\)](#)
- [WPSCapabilities\\$execute\(\)](#)
- [WPSCapabilities\\$clone\(\)](#)

**Method** `new()`: Initializes a [WPSCapabilities](#) object

*Usage:*

```
WPSCapabilities$new(url, version, client = NULL, logger = NULL, ...)
```

*Arguments:*

`url` url

`version` version

`client` an object of class [WPSClient](#)

`logger` logger type NULL, "INFO" or "DEBUG"

... any other parameter to pass to [OWSGetCapabilities](#) service request

**Method** `getProcesses()`: Get the list of processes offered by the service capabilities. `pretty` allows to control the type output. If TRUE, a `data.frame` will be returned. When prettified output, it is also possible to get a 'full' description of the process by setting `full = TRUE` in which case a the WPS client will request a process description (with more information about the process) for each process listed in the capabilities.

*Usage:*

```
WPSCapabilities$getProcesses(pretty = FALSE, full = FALSE)
```

*Arguments:*

`pretty` pretty

`full` full

*Returns:* a list of [WPSProcessDescription](#) or a `data.frame`

**Method** `describeProcess()`: Get the description of a process, given its identifier, returning an object of class [WPSProcessDescription](#)

*Usage:*

```
WPSCapabilities$describeProcess(identifier)
```

*Arguments:*

`identifier` process identifier

*Returns:* an object of class [WPSProcessDescription](#)

**Method** `execute()`: Execute a process, given its identifier

*Usage:*

```

WPSCapabilities$execute(
  identifier,
  dataInputs = list(),
  responseForm = NULL,
  storeExecuteResponse = FALSE,
  lineage = NULL,
  status = NULL,
  update = FALSE,
  updateInterval = 1
)

```

*Arguments:*

*identifier* process identifier

*dataInputs* a named list of data inputs, objects of class [WPSLiteralData](#), [WPSComplexData](#) or [WPSBoundingBoxData](#)

*responseForm* response form, object of class [WPSResponseDocument](#)

*storeExecuteResponse* store execute response? object of class logical. FALSE by default

*lineage* lineage, object of class logical

*status* status, object of class logical

*update* update, object of class logical. For asynchronous requests

*updateInterval* update interval, object of class integer. For asynchronous requests

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

```
WPSCapabilities$clone(deep = FALSE)
```

*Arguments:*

*deep* Whether to make a deep clone.

**Note**

Class used to read a `WPSCapabilities` document. The use of `WPSClient` is recommended instead to benefit from the full set of capabilities associated to a WPS server.

**Author(s)**

Emmanuel Blondel <emmanuel.blondell@gmail.com>

---

WPSClient

*WPSClient*

---

**Description**

WPSClient

WPSClient



**Format**

R6Class object.

**Value**

Object of R6Class with methods for interfacing an OGC Web Processing Service.

**Super classes**

ows4R::OGCAbstractObject -> ows4R::OWSClient -> WPSClient

**Methods****Public methods:**

- WPSClient\$new()
- WPSClient\$getCapabilities()
- WPSClient\$reloadCapabilities()
- WPSClient\$getProcesses()
- WPSClient\$describeProcess()
- WPSClient\$execute()
- WPSClient\$clone()

**Method new():** This method is used to instantiate a WPSClient with the url of the OGC service. Authentication is supported using basic auth (using user/pwd arguments), bearer token (using token argument), or custom (using headers argument). By default, the logger argument will be set to NULL (no logger). This argument accepts two possible values: INFO: to print only **ows4R** logs, DEBUG: to print more verbose logs

*Usage:*

```
WPSClient$new(
  url,
  serviceVersion = NULL,
  user = NULL,
  pwd = NULL,
  token = NULL,
  headers = c(),
  config = httr::config(),
  cas_url = NULL,
  logger = NULL
)
```

*Arguments:*

```
url url
serviceVersion WFS service version
user user
pwd password
token token
headers headers
```

```

config config
cas_url Central Authentication Service (CAS) URL
logger logger

```

**Method** `getCapabilities()`: Get WPS capabilities

*Usage:*

```
WPSClient$getCapabilities()
```

*Returns:* an object of class [WPSCapabilities](#)

**Method** `reloadCapabilities()`: Reloads WPS capabilities

*Usage:*

```
WPSClient$reloadCapabilities()
```

**Method** `getProcesses()`: Get the list of processes offered by the service capabilities. `pretty` allows to control the type output. If `TRUE`, a `data.frame` will be returned. When prettified output, it is also possible to get a 'full' description of the process by setting `full = TRUE` in which case the WPS client will request a process description (with more information about the process) for each process listed in the capabilities.

*Usage:*

```
WPSClient$getProcesses(pretty = FALSE, full = FALSE)
```

*Arguments:*

```
pretty pretty
```

```
full full
```

*Returns:* a list of [WPSProcessDescription](#) or a `data.frame`

**Method** `describeProcess()`: Get the description of a process, given its identifier, returning an object of class `WPSProcessDescription`

*Usage:*

```
WPSClient$describeProcess(identifier)
```

*Arguments:*

```
identifier process identifier
```

*Returns:* an object of class [WPSProcessDescription](#)

**Method** `execute()`: Execute a process, given its identifier

*Usage:*

```

WPSClient$execute(
  identifier,
  dataInputs = list(),
  responseForm = NULL,
  storeExecuteResponse = FALSE,
  lineage = NULL,
  status = NULL,
  update = FALSE,
  updateInterval = 1
)

```

*Arguments:*

identifier process identifier  
 dataInputs a named list of data inputs, objects of class [WPSLiteralData](#), [WPSComplexData](#)  
 or [WPSBoundingBoxData](#)  
 responseForm response form, object of class [WPSResponseDocument](#)  
 storeExecuteResponse store execute response? object of class logical. FALSE by default  
 lineage lineage, object of class logical  
 status status, object of class logical  
 update update, object of class logical. For asynchronous requests  
 updateInterval update interval, object of class integer. For asynchronous requests

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

```
WPSClient$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

**Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

**Examples**

```
## Not run:
#example based on a WPS endpoint responding at http://localhost:8080/geoserver/wps
wps <- WPSClient$new("http://localhost:8080/geoserver/wps", serviceVersion = "1.0.0")

#get capabilities
caps <- wps$getCapabilities()

## End(Not run)
```

---

WPSComplexData

*WPSComplexData*

---

**Description**

WPSComplexData

WPSComplexData

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) for modelling a WPS Complex Data

**Super class**

[ows4R::OGCAbstractObject](#) -> WPSComplexData

**Public fields**

value value

**Methods****Public methods:**

- [WPSComplexData\\$new\(\)](#)
- [WPSComplexData\\$decode\(\)](#)
- [WPSComplexData\\$checkValidity\(\)](#)
- [WPSComplexData\\$getFeatures\(\)](#)
- [WPSComplexData\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes an object of class [WPSComplexData](#)

*Usage:*

```
WPSComplexData$new(
  xml = NULL,
  value = NULL,
  schema = NULL,
  mimeType = NULL,
  serviceVersion = "1.0.0",
  cdata = TRUE
)
```

*Arguments:*

xml an object of class [XMLInternalNode-class](#) to initialize from XML  
 value value  
 schema schema  
 mimeType mime type  
 serviceVersion WPS service version  
 cdata whether value has to be wrapped in a XML CDATA. Default is TRUE

**Method** [decode\(\)](#): Decodes an object of class [WPSComplexData](#) from XML

*Usage:*

```
WPSComplexData$decode(xml)
```

*Arguments:*

xml an object of class [XMLInternalNode-class](#) to initialize from XML

**Method** `checkValidity()`: Check the object against a parameter description inherited from a WPS process description, object of class `WPSComplexInputDescription`. If not valid, the function will raise an error.

*Usage:*

```
WPSComplexData$checkValidity(parameterDescription)
```

*Arguments:*

`parameterDescription` object of class [WPSComplexInputDescription](#)

*Returns:* an error if not valid

**Method** `getFeatures()`: Get features

*Usage:*

```
WPSComplexData$getFeatures()
```

*Returns:* object of class `sf`

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

```
WPSComplexData$clone(deep = FALSE)
```

*Arguments:*

`deep` Whether to make a deep clone.

#### Author(s)

Emmanuel Blondel <emmanuel.blondell@gmail.com>

---

WPSComplexInputDescription

*WPSComplexInputDescription*

---

#### Description

WPSComplexInputDescription

WPSComplexInputDescription

#### Format

[R6Class](#) object.

#### Value

Object of [R6Class](#) modelling a WPS process complex input description

#### Super classes

[ows4R::OGCAbstractObject](#) -> [ows4R::WPSParameter](#) -> [ows4R::WPSDescriptionParameter](#)  
-> [ows4R::WPSInputDescription](#) -> `WPSComplexInputDescription`

**Methods****Public methods:**

- [WPSComplexInputDescription\\$new\(\)](#)
- [WPSComplexInputDescription\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes a [WPSComplexInputDescription](#)

*Usage:*

```
WPSComplexInputDescription$new(xml = NULL, version, logger = NULL, ...)
```

*Arguments:*

xml object of class [XMLInternalNode-class](#) from **XML**

version WPS service version

logger logger

... any other parameter

**Method** [clone\(\)](#): The objects of this class are cloneable with this method.

*Usage:*

```
WPSComplexInputDescription$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

**Note**

Class used internally by **ows4R**

**Author(s)**

Emmanuel Blondel <emmanuel.blondell@gmail.com>

---

WPSComplexOutputDescription

*WPSComplexOutputDescription*

---

**Description**

WPSComplexOutputDescription

WPSComplexOutputDescription

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) modelling a WPS process complex input description

**Super classes**

[ows4R::OGCAbstractObject](#) -> [ows4R::WPSParameter](#) -> [ows4R::WPSDescriptionParameter](#)  
-> [ows4R::WPSOutputDescription](#) -> [WPSComplexOutputDescription](#)

**Methods****Public methods:**

- [WPSComplexOutputDescription\\$new\(\)](#)
- [WPSComplexOutputDescription\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes a [WPSComplexOutputDescription](#)

*Usage:*

```
WPSComplexOutputDescription$new(xml = NULL, version, logger = NULL, ...)
```

*Arguments:*

xml object of class [XMLInternalNode-class](#) from **XML**

version WPS service version

logger logger

... any other parameter

**Method** [clone\(\)](#): The objects of this class are cloneable with this method.

*Usage:*

```
WPSComplexOutputDescription$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

**Note**

Class used internally by **ows4R**

**Author(s)**

Emmanuel Blondel <[emmanuel.blondell@gmail.com](mailto:emmanuel.blondell@gmail.com)>

---

WPSDescribeProcess      *WPSDescribeProcess*

---

**Description**

WPSDescribeProcess

WPSDescribeProcess

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) for modelling a WPS DescribeProcess request

**Super classes**

[ows4R::OGCAbstractObject](#) -> [ows4R::OWSHttpRequest](#) -> WPSDescribeProcess

**Methods****Public methods:**

- [WPSDescribeProcess\\$new\(\)](#)
- [WPSDescribeProcess\\$clone\(\)](#)

**Method** `new()`: Initializes a [WPSDescribeProcess](#) service request

*Usage:*

```
WPSDescribeProcess$new(
  capabilities,
  op,
  url,
  serviceVersion,
  identifier,
  user = NULL,
  pwd = NULL,
  token = NULL,
  headers = c(),
  config = httr::config(),
  logger = NULL,
  ...
)
```

*Arguments:*

`capabilities` object of class [WPSCapabilities](#)

`op` object of class [OWSOperation](#)

`url` url

`serviceVersion` WPS service version

`identifier` process identifier

`user` user

`pwd` password

`token` token

`headers` headers

`config` config

`logger` logger

`...` any other parameter to pass to the request

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*



```
WPSDescribeProcess$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

### Note

Class used internally by **ows4R** to trigger a WPS DescribeProcess request

### Author(s)

Emmanuel Blondel <emmanuel.blondell@gmail.com>

---

WPSDescriptionParameter

*WPSDescriptionParameter*

---

### Description

WPSDescriptionParameter

WPSDescriptionParameter

### Format

[R6Class](#) object.

### Value

Object of [R6Class](#) modelling a WPS process input description parameter

### Super classes

[ows4R::OGCAbstractObject](#) -> [ows4R::WSPParameter](#) -> WPSDescriptionParameter

### Methods

#### Public methods:

- [WPSDescriptionParameter\\$new\(\)](#)
- [WPSDescriptionParameter\\$getDataType\(\)](#)
- [WPSDescriptionParameter\\$getFormats\(\)](#)
- [WPSDescriptionParameter\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes a [WPSDescriptionParameter](#)

*Usage:*

```
WPSDescriptionParameter$new(xml = NULL, version, logger = NULL, ...)
```

*Arguments:*

xml object of class [XMLInternalNode-class](#) from XML  
 version WPS service version  
 logger logger  
 ... any other parameter

**Method** `getDataType()`: Get data type

*Usage:*

`WPSDescriptionParameter$getDataType()`

*Returns:* object of class character

**Method** `getFormats()`: get formats

*Usage:*

`WPSDescriptionParameter$getFormats()`

*Returns:* the formats

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

`WPSDescriptionParameter$clone(deep = FALSE)`

*Arguments:*

deep Whether to make a deep clone.

#### Note

Class used internally by **ows4R**

#### Author(s)

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

WPSException

*WPSException*

---

#### Description

WPSException

WPSException

#### Format

[R6Class](#) object.

#### Value

Object of [R6Class](#) for modelling a WPS Exception

**Super class**

[ows4R: :OGCAbstractObject](#) -> WPSException

**Public fields**

value value

percentCompleted percent of completion

**Methods****Public methods:**

- [WPSException\\$new\(\)](#)
- [WPSException\\$decode\(\)](#)
- [WPSException\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes a [WPSException](#)

*Usage:*

```
WPSException$new(xml = NULL, serviceVersion = "1.0.0")
```

*Arguments:*

xml object of class [XMLInternalNode-class](#) from **XML**

serviceVersion service version. Default "1.0.0"

**Method** [decode\(\)](#): Decodes an object of class [WPSException](#) from XML

*Usage:*

```
WPSException$decode(xml)
```

*Arguments:*

xml object of class [XMLInternalNode-class](#) from **XML**

**Method** [clone\(\)](#): The objects of this class are cloneable with this method.

*Usage:*

```
WPSException$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

**Author(s)**

Emmanuel Blondel <[emmanuel.blondel1@gmail.com](mailto:emmanuel.blondel1@gmail.com)>

---

 WPSExecute

*WPSExecute*


---

**Description**

WPSExecute

WPSExecute

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) for modelling a WPS Execute request

**Super classes**

[ows4R::OGCAbstractObject](#) -> [ows4R::OWSHttpRequest](#) -> WPSExecute

**Public fields**

Identifier process identifier

DataInputs list of [WPSInput](#)

ResponseForm response form

**Methods****Public methods:**

- [WPSExecute\\$new\(\)](#)
- [WPSExecute\\$getProcessDescription\(\)](#)
- [WPSExecute\\$clone\(\)](#)

**Method new():** Initializes a [WPSExecute](#) service request

*Usage:*

```
WPSExecute$new(
  capabilities,
  op,
  url,
  serviceVersion,
  identifier,
  dataInputs = list(),
  responseForm = NULL,
  storeExecuteResponse = FALSE,
  lineage = NULL,
  status = NULL,
```

```

    user = NULL,
    pwd = NULL,
    token = NULL,
    headers = c(),
    config = httr::config(),
    logger = NULL,
    ...
)

```

*Arguments:*

capabilities object of class [WPSCapabilities](#)  
op object of class [OWSOperation](#)  
url url  
serviceVersion WPS service version  
identifier process identifier  
dataInputs a named list of data inputs, objects of class [WPSLiteralData](#), [WPSComplexData](#)  
or [WPSBoundingBoxData](#)  
responseForm response form, object of class [WPSResponseDocument](#)  
storeExecuteResponse store execute response? object of class logical. FALSE by default  
lineage lineage, object of class logical  
status status, object of class logical  
user user  
pwd password  
token token  
headers headers  
config config  
logger logger  
... any other parameter to pass to the request

**Method** `getProcessDescription()`: Get process description

*Usage:*

```
WPSExecute$getProcessDescription()
```

*Returns:* an object of class [WPSProcessDescription](#)

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

```
WPSExecute$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

**Note**

Class used internally by **ows4R** to trigger a WPS Execute request

**Author(s)**

Emmanuel Blondel <emmanuel.blondell@gmail.com>

---

WPSExecuteResponse      *WPSExecuteResponse*

---

**Description**

WPSExecuteResponse

WPSExecuteResponse

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) for modelling a WPS Execute response

**Super class**

[ows4R: :OGCAbstractObject](#) -> WPSExecuteResponse

**Public fields**

process process

status status

statusLocation status location

statusHistory status history

processOutputs process outputs

exception exception

**Methods****Public methods:**

- [WPSExecuteResponse\\$new\(\)](#)
- [WPSExecuteResponse\\$getProcess\(\)](#)
- [WPSExecuteResponse\\$status\(\)](#)
- [WPSExecuteResponse\\$statusLocation\(\)](#)
- [WPSExecuteResponse\\$statusHistory\(\)](#)
- [WPSExecuteResponse\\$getProcessOutputs\(\)](#)
- [WPSExecuteResponse\\$getException\(\)](#)
- [WPSExecuteResponse\\$decode\(\)](#)
- [WPSExecuteResponse\\$update\(\)](#)
- [WPSExecuteResponse\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes a [WPSExecuteResponse](#)

*Usage:*

```
WPSExecuteResponse$new(  
  xml,  
  capabilities,  
  processDescription = NULL,  
  logger = NULL  
)
```

*Arguments:*

xml object of class [XMLInternalNode-class](#) from [XML](#)  
capabilities object of class [WPSCapabilities](#)  
processDescription process description  
logger logger

**Method** `getProcess()`: Get process

*Usage:*

```
WPSExecuteResponse$getProcess()
```

*Returns:* an object of class [WPSProcess](#)

**Method** `getStatus()`: Get status

*Usage:*

```
WPSExecuteResponse$getStatus()
```

*Returns:* an object of class [WPSStatus](#)

**Method** `getStatusLocation()`: Get status location

*Usage:*

```
WPSExecuteResponse$getStatusLocation()
```

*Returns:* an object of class character

**Method** `getStatusHistory()`: Get status history

*Usage:*

```
WPSExecuteResponse$getStatusHistory()
```

*Returns:* an object of class character

**Method** `getProcessOutputs()`: Get list of process outputs

*Usage:*

```
WPSExecuteResponse$getProcessOutputs()
```

*Returns:* a list of outputs

**Method** `getException()`: Get exception

*Usage:*

```
WPSExecuteResponse$getException()
```

*Returns:* an object of class [WPSException](#)

**Method** `decode()`: Decodes an object of class [WPSExecuteResponse](#) from XML

*Usage:*

WPSExecuteResponse\$decode(xml, capabilities, processDescription, logger)

*Arguments:*

xml object of class [XMLInternalNode-class](#) from **XML**  
 capabilities object of class [WPSCapabilities](#)  
 processDescription process description  
 logger logger

**Method** update(): Updates status history

*Usage:*

WPSExecuteResponse\$update(verbose = FALSE)

*Arguments:*

verbose verbose. Default is FALSE

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

WPSExecuteResponse\$clone(deep = FALSE)

*Arguments:*

deep Whether to make a deep clone.

**Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

WPSFormat

*WPSFormat*

---

**Description**

WPSFormat

WPSFormat

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) modelling a WPS process input description

**Super class**

[ows4R::OGCAbstractObject](#) -> WPSFormat



**Methods****Public methods:**

- [WPSFormat\\$new\(\)](#)
- [WPSFormat\\$getMimeType\(\)](#)
- [WPSFormat\\$getEncoding\(\)](#)
- [WPSFormat\\$getSchema\(\)](#)
- [WPSFormat\\$setIsDefault\(\)](#)
- [WPSFormat\\$isDefault\(\)](#)
- [WPSFormat\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes an object of class [WPSFormat](#)

*Usage:*

```
WPSFormat$new(xml = NULL, version, logger = NULL, ...)
```

*Arguments:*

xml an object of class [XMLInternalNode-class](#) to initialize from XML

version WPS service version

logger logger

... any additional parameter

**Method** [getMimeType\(\)](#): Get mime type

*Usage:*

```
WPSFormat$getMimeType()
```

*Returns:* object of class character

**Method** [getEncoding\(\)](#): Get encoding

*Usage:*

```
WPSFormat$getEncoding()
```

*Returns:* object of class character

**Method** [getSchema\(\)](#): Get schema

*Usage:*

```
WPSFormat$getSchema()
```

*Returns:* object of class character

**Method** [setIsDefault\(\)](#): set is default

*Usage:*

```
WPSFormat$setIsDefault(default)
```

*Arguments:*

default object of class logical

**Method** [isDefault\(\)](#): is default

*Usage:*

WPSFormat\$isDefault()

*Returns:* TRUE if default, FALSE otherwise

**Method clone():** The objects of this class are cloneable with this method.

*Usage:*

WPSFormat\$clone(deep = FALSE)

*Arguments:*

deep Whether to make a deep clone.

### Note

Class used internally by **ows4R**

### Author(s)

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

WPSInput

*WPSInput*

---

### Description

WPSInput

WPSInput

### Format

[R6Class](#) object.

### Value

Object of [R6Class](#) for modelling a WPS Input

### Super class

[ows4R::OGCAbstractObject](#) -> WPSInput

### Public fields

Identifier identifier

Data data

## Methods

### Public methods:

- [WPSInput\\$new\(\)](#)
- [WPSInput\\$clone\(\)](#)

**Method** `new()`: Initializes a [WPSInput](#)

*Usage:*

```
WPSInput$new(xml = NULL, identifier, data, serviceVersion = "1.0.0")
```

*Arguments:*

`xml` object of class [XMLInternalNode-class](#) from **XML**

`identifier` identifier

`data` data

`serviceVersion` service version. Default "1.0.0"

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

```
WPSInput$clone(deep = FALSE)
```

*Arguments:*

`deep` Whether to make a deep clone.

## Author(s)

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

WPSInputDescription    *WPSInputDescription*

---

## Description

WPSInputDescription

WPSInputDescription

## Format

[R6Class](#) object.

## Value

Object of [R6Class](#) modelling a WPS process input description

## Super classes

[ows4R::OGCAbstractObject](#) -> [ows4R::WPSParameter](#) -> [ows4R::WPSDescriptionParameter](#)  
-> [WPSInputDescription](#)

## Methods

### Public methods:

- [WPSInputDescription\\$new\(\)](#)
- [WPSInputDescription\\$getMinOccurs\(\)](#)
- [WPSInputDescription\\$getMaxOccurs\(\)](#)
- [WPSInputDescription\\$asDataFrame\(\)](#)
- [WPSInputDescription\\$clone\(\)](#)

**Method** `new()`: Initializes a [WPSInputDescription](#)

*Usage:*

```
WPSInputDescription$new(xml = NULL, version, logger = NULL, ...)
```

*Arguments:*

`xml` object of class [XMLInternalNode-class](#) from [XML](#)

`version` WPS service version

`logger` logger

... any other parameter

**Method** `getMinOccurs()`: Get min occurs

*Usage:*

```
WPSInputDescription$getMinOccurs()
```

*Returns:* the min occurs

**Method** `getMaxOccurs()`: Get max occurs

*Usage:*

```
WPSInputDescription$getMaxOccurs()
```

*Returns:* the max occurs

**Method** `asDataFrame()`: Get input description as data.frame

*Usage:*

```
WPSInputDescription$asDataFrame()
```

*Returns:* object of class character

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

```
WPSInputDescription$clone(deep = FALSE)
```

*Arguments:*

`deep` Whether to make a deep clone.

## Note

Class used internally by **ows4R**

## Author(s)

Emmanuel Blondel <emmanuel.blondell@gmail.com>

---

WPSLiteralData

*WPSLiteralData*

---

### Description

WPSLiteralData

WPSLiteralData

### Format

[R6Class](#) object.

### Value

Object of [R6Class](#) for modelling a WPS Literal Data

### Super class

[ows4R::OGCAbstractObject](#) -> WPSLiteralData

### Public fields

value value

### Methods

#### Public methods:

- [WPSLiteralData\\$new\(\)](#)
- [WPSLiteralData\\$decode\(\)](#)
- [WPSLiteralData\\$checkValidity\(\)](#)
- [WPSLiteralData\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes an object of class [WPSLiteralData](#)

*Usage:*

```
WPSLiteralData$new(xml = NULL, value = NULL, serviceVersion = "1.0.0")
```

*Arguments:*

xml an object of class [XMLInternalNode-class](#) to initialize from XML

value value

serviceVersion WPS service version

**Method** [decode\(\)](#): Decodes an object of class [WPSLiteralData](#) from XML

*Usage:*

```
WPSLiteralData$decode(xml)
```

*Arguments:*

xml an object of class [XMLInternalNode-class](#) to initialize from XML

**Method** `checkValidity()`: Check the object against a parameter description inherited from a WPS process description, object of class `WPSLiteralInputDescription`. If not valid, the function will raise an error.

*Usage:*

```
WPSLiteralData$checkValidity(parameterDescription)
```

*Arguments:*

`parameterDescription` object of class [WPSLiteralInputDescription](#)

*Returns:* an error if not valid

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

```
WPSLiteralData$clone(deep = FALSE)
```

*Arguments:*

`deep` Whether to make a deep clone.

#### Author(s)

Emmanuel Blondel <emmanuel.blondell@gmail.com>

---

WPSLiteralInputDescription

*WPSLiteralInputDescription*

---

#### Description

WPSLiteralInputDescription

WPSLiteralInputDescription

#### Format

[R6Class](#) object.

#### Value

Object of [R6Class](#) modelling a WPS process input description

#### Super classes

```
ows4R::OGCAbstractObject -> ows4R::WPSParameter -> ows4R::WPSDescriptionParameter
-> ows4R::WPSInputDescription -> WPSLiteralInputDescription
```

**Methods****Public methods:**

- [WPSLiteralInputDescription\\$new\(\)](#)
- [WPSLiteralInputDescription\\$getDataType\(\)](#)
- [WPSLiteralInputDescription\\$getDefaultValue\(\)](#)
- [WPSLiteralInputDescription\\$getAllowedValues\(\)](#)
- [WPSLiteralInputDescription\\$clone\(\)](#)

**Method** `new()`: Initializes a [WPSLiteralInputDescription](#)

*Usage:*

```
WPSLiteralInputDescription$new(xml = NULL, version, logger = NULL, ...)
```

*Arguments:*

`xml` object of class [XMLInternalNode-class](#) from [XML](#)

`version` WPS service version

`logger` logger

... any other parameter

**Method** `getDataType()`: Get data type

*Usage:*

```
WPSLiteralInputDescription$getDataType()
```

*Returns:* the data type, object of class character

**Method** `getDefaultValue()`: Get default value

*Usage:*

```
WPSLiteralInputDescription$getDefaultValue()
```

*Returns:* the default value, object of class character

**Method** `getAllowedValues()`: Get allowed values

*Usage:*

```
WPSLiteralInputDescription$getAllowedValues()
```

*Returns:* the allowed values

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

```
WPSLiteralInputDescription$clone(deep = FALSE)
```

*Arguments:*

`deep` Whether to make a deep clone.

**Note**

Class used internally by **ows4R**

**Author(s)**

Emmanuel Blondel <emmanuel.blondell@gmail.com>

---

WPSLiteralOutputDescription  
*WPSLiteralOutputDescription*

---

**Description**

WPSLiteralOutputDescription  
 WPSLiteralOutputDescription

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) modelling a WPS process literal output description

**Super classes**

[ows4R::OGCAbstractObject](#) -> [ows4R::WSPParameter](#) -> [ows4R::WPSDescriptionParameter](#)  
 -> [ows4R::WPSOutputDescription](#) -> WPSLiteralOutputDescription

**Methods****Public methods:**

- [WPSLiteralOutputDescription\\$new\(\)](#)
- [WPSLiteralOutputDescription\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes a [WPSLiteralOutputDescription](#)

*Usage:*

[WPSLiteralOutputDescription\\$new](#)(xml = NULL, version, logger = NULL, ...)

*Arguments:*

xml object of class [XMLInternalNode-class](#) from **XML**

version WPS service version

logger logger

... any other parameter

**Method** [clone\(\)](#): The objects of this class are cloneable with this method.

*Usage:*

[WPSLiteralOutputDescription\\$clone](#)(deep = FALSE)

*Arguments:*

deep Whether to make a deep clone.



**Note**

Class used internally by **ows4R**

**Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

WPSOutput

*WPSOutput*

---

**Description**

WPSOutput

WPSOutput

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) for modelling a WPS Input

**Super class**

[ows4R::OGCAbstractObject](#) -> WPSOutput

**Public fields**

Identifier identifier

Title title

Data data

**Methods****Public methods:**

- [WPSOutput\\$new\(\)](#)
- [WPSOutput\\$decode\(\)](#)
- [WPSOutput\\$getData\(\)](#)
- [WPSOutput\\$getDataValue\(\)](#)
- [WPSOutput\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes a [WPSOutput](#)

*Usage:*

```
WPSOutput$new(  
  xml = NULL,  
  identifier = NULL,  
  title = NULL,  
  data = NULL,  
  dataType = NULL,  
  serviceVersion = "1.0.0"  
)
```

*Arguments:*

xml object of class [XMLInternalNode-class](#) from **XML**  
identifier identifier  
title title  
data data  
dataType data type  
serviceVersion WPS service version

**Method** decode(): Decodes an object of class [WPSOutput](#) from **XML**

*Usage:*

```
WPSOutput$decode(xml)
```

*Arguments:*

xml object of class [XMLInternalNode-class](#) from **XML**

**Method** getData(): Get data

*Usage:*

```
WPSOutput$getData()
```

*Returns:* data

**Method** getDataValue(): Get data value

*Usage:*

```
WPSOutput$getDataValue()
```

*Returns:* data value

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

```
WPSOutput$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

**Author(s)**

Emmanuel Blondel <emmanuel.blondell@gmail.com>

---

WPSOutputDescription    *WPSOutputDescription*

---

**Description**

WPSOutputDescription

WPSOutputDescription

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) modelling a WPS process input description

**Super classes**

[ows4R::OGCAbstractObject](#) -> [ows4R::WPSParameter](#) -> [ows4R::WPSDescriptionParameter](#)  
-> [WPSOutputDescription](#)

**Methods****Public methods:**

- [WPSOutputDescription\\$new\(\)](#)
- [WPSOutputDescription\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes a [WPSOutputDescription](#)

*Usage:*

[WPSOutputDescription\\$new](#)(xml = NULL, version, logger = NULL, ...)

*Arguments:*

xml object of class [XMLInternalNode-class](#) from [XML](#)

version WPS service version

logger logger

... any other parameter

**Method** [clone\(\)](#): The objects of this class are cloneable with this method.

*Usage:*

[WPSOutputDescription\\$clone](#)(deep = FALSE)

*Arguments:*

deep Whether to make a deep clone.

**Note**

Class used internally by [ows4R](#)

**Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

WSPParameter

*WSPParameter*

---

**Description**

WSPParameter

WSPParameter

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) modelling a WPS parameter

**Super class**

[ows4R::OGCAbstractObject](#) -> WSPParameter

**Methods****Public methods:**

- [WSPParameter\\$new\(\)](#)
- [WSPParameter\\$getIdentifier\(\)](#)
- [WSPParameter\\$getTitle\(\)](#)
- [WSPParameter\\$getAbstract\(\)](#)
- [WSPParameter\\$clone\(\)](#)

**Method new():** Initializes an object of class [WSPParameter](#)

*Usage:*

`WSPParameter$new(xml = NULL, version, logger = NULL, ...)`

*Arguments:*

xml an object of class [XMLInternalNode-class](#) to initialize from XML

version WPS service version

logger logger

... any additional parameter

**Method getIdentifier():** Get identifier

*Usage:*

`WSPParameter$getIdentifier()`

*Returns:* object of class character

**Method** getTitle(): Get title

*Usage:*

WSPParameter\$title()

*Returns:* object of class character

**Method** getAbstract(): Get abstract

*Usage:*

WSPParameter\$getAbstract()

*Returns:* object of class character

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

WSPParameter\$clone(deep = FALSE)

*Arguments:*

deep Whether to make a deep clone.

#### Note

Abstract class used internally by **ows4R**

#### Author(s)

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

WPSProcess

*WPSProcess*

---

#### Description

WPSProcess

WPSProcess

#### Format

[R6Class](#) object.

#### Value

Object of [R6Class](#) modelling a WPS process

#### Super class

[ows4R::OGCAbstractObject](#) -> WPSProcess

**Methods****Public methods:**

- [WPSProcess\\$new\(\)](#)
- [WPSProcess\\$getIdentifier\(\)](#)
- [WPSProcess\\$getTitle\(\)](#)
- [WPSProcess\\$getVersion\(\)](#)
- [WPSProcess\\$getDescription\(\)](#)
- [WPSProcess\\$execute\(\)](#)
- [WPSProcess\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes a [WPSProcess](#)

*Usage:*

`WPSProcess$new(xml, capabilities = NULL, version, logger = NULL, ...)`

*Arguments:*

`xml` object of class [XMLInternalNode-class](#) from **XML**

`capabilities` object of class [WPSCapabilities](#)

`version` service version

`logger` logger

`...` any additional parameter

**Method** [getIdentifier\(\)](#): Get identifier

*Usage:*

`WPSProcess$getIdentifier()`

*Returns:* object of class character

**Method** [getTitle\(\)](#): Get title

*Usage:*

`WPSProcess$getTitle()`

*Returns:* object of class character

**Method** [getVersion\(\)](#): Get version

*Usage:*

`WPSProcess$getVersion()`

*Returns:* object of class character

**Method** [getDescription\(\)](#): Get description

*Usage:*

`WPSProcess$getDescription()`

*Returns:* object of class [WPSProcessDescription](#)

**Method** [execute\(\)](#): Execute process

*Usage:*

```

WSPProcess$execute(
  dataInputs = list(),
  responseForm = NULL,
  storeExecuteResponse = FALSE,
  lineage = NULL,
  status = NULL,
  update = FALSE,
  updateInterval = 1
)

```

*Arguments:*

`dataInputs` a named list of data inputs, objects of class [WPSLiteralData](#), [WPSComplexData](#) or [WPSBoundingBoxData](#)

`responseForm` response form, object of class [WPSResponseDocument](#)

`storeExecuteResponse` store execute response? object of class logical. FALSE by default

`lineage` lineage, object of class logical

`status` status, object of class logical

`update` update, object of class logical. For asynchronous requests

`updateInterval` update interval, object of class integer. For asynchronous requests

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

```
WSPProcess$clone(deep = FALSE)
```

*Arguments:*

`deep` Whether to make a deep clone.

**Note**

Class used internally by **ows4R**

**Author(s)**

Emmanuel Blondel <emmanuel.blondell@gmail.com>

---

WSPProcessDescription *WSPProcessDescription*

---

**Description**

WSPProcessDescription

WSPProcessDescription

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) modelling a WPS process description

**Super class**

[ows4R::OGCAbstractObject](#) -> WPSProcessDescription

**Methods****Public methods:**

- [WPSProcessDescription\\$new\(\)](#)
- [WPSProcessDescription\\$getIdentifier\(\)](#)
- [WPSProcessDescription\\$getTitle\(\)](#)
- [WPSProcessDescription\\$getAbstract\(\)](#)
- [WPSProcessDescription\\$getVersion\(\)](#)
- [WPSProcessDescription\\$isStatusSupported\(\)](#)
- [WPSProcessDescription\\$isStoreSupported\(\)](#)
- [WPSProcessDescription\\$getDataInputs\(\)](#)
- [WPSProcessDescription\\$getProcessOutputs\(\)](#)
- [WPSProcessDescription\\$asDataFrame\(\)](#)
- [WPSProcessDescription\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes an object of class [WPSProcessDescription](#)

*Usage:*

```
WPSProcessDescription$new(xml, version, logger = NULL, ...)
```

*Arguments:*

xml object of class [XMLInternalNode-class](#) from [XML](#)

version version

logger logger

... any other parameter

**Method** [getIdentifier\(\)](#): Get process identifier

*Usage:*

```
WPSProcessDescription$getIdentifier()
```

*Returns:* the identifier, object of class character

**Method** [getTitle\(\)](#): Get process title

*Usage:*

```
WPSProcessDescription$getTitle()
```

*Returns:* the title, object of class character

**Method** [getAbstract\(\)](#): Get process abstract

*Usage:*

```
WPSProcessDescription$getAbstract()
```



*Returns:* the abstract, object of class character

**Method** getVersion(): Get process version

*Usage:*

WSPProcessDescription\$getVersion()

*Arguments:*

the version, object of class character

**Method** isStatusSupported(): Indicates if the status is supported

*Usage:*

WSPProcessDescription\$isStatusSupported()

*Returns:* TRUE if supported, FALSE otherwise

**Method** isStoreSupported(): Indicates if the store is supported

*Usage:*

WSPProcessDescription\$isStoreSupported()

*Returns:* TRUE if supported, FALSE otherwise

**Method** getDataInputs(): Get data inputs

*Usage:*

WSPProcessDescription\$getDataInputs()

*Returns:* a list of objects extending [WPSInputDescription](#)

**Method** getProcessOutputs(): Get process outputs

*Usage:*

WSPProcessDescription\$getProcessOutputs()

*Returns:* a list of objects extending [WPSOutputDescription](#)

**Method** asDataFrame(): Convenience method to export a process description as data.frame

*Usage:*

WSPProcessDescription\$asDataFrame()

*Returns:* a data.frame giving the process description

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

WSPProcessDescription\$clone(deep = FALSE)

*Arguments:*

deep Whether to make a deep clone.

#### Note

Class used internally by **ows4R**

#### Author(s)

Emmanuel Blondel <emmanuel.blondell@gmail.com>

---

WPSResponseDocument    *WPSResponseDocument*

---

### Description

WPSResponseDocument

WPSResponseDocument

### Format

[R6Class](#) object.

### Value

Object of [R6Class](#) for modelling an OGC WPS response document

### Super class

[ows4R: :OGCAbstractObject](#) -> WPSResponseDocument

### Public fields

Output output property

### Methods

#### Public methods:

- [WPSResponseDocument\\$new\(\)](#)
- [WPSResponseDocument\\$clone\(\)](#)

**Method** `new()`: Initializes a [WPSResponseDocument](#)

*Usage:*

```
WPSResponseDocument$new(
  xml = NULL,
  storeExecuteResponse = FALSE,
  lineage = NULL,
  status = NULL,
  output = NULL,
  serviceVersion = "1.0.0"
)
```

*Arguments:*

xml object of class [XMLInternalNode-class](#) from **XML**  
 storeExecuteResponse store execute response, object of class logical  
 lineage lineage, object of class logical  
 status status, object of class logical

output output  
 serviceVersion WPS service version

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

WPSResponseDocument\$clone(deep = FALSE)

*Arguments:*

deep Whether to make a deep clone.

#### Author(s)

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

WPSStatus

*WPSStatus*

---

#### Description

WPSStatus

WPSStatus

#### Format

[R6Class](#) object.

#### Value

Object of [R6Class](#) for modelling a WPS Status

#### Super class

[ows4R::OGCAbstractObject](#) -> WPSStatus

#### Public fields

value status value

percentCompleted status percentage of completion

#### Methods

##### Public methods:

- [WPSStatus\\$new\(\)](#)
- [WPSStatus\\$decode\(\)](#)
- [WPSStatus\\$getValue\(\)](#)
- [WPSStatus\\$getPercentCompleted\(\)](#)
- [WPSStatus\\$getCreationTime\(\)](#)

- [WPSStatus\\$clone\(\)](#)

**Method new():** Initializes a [WPSStatus](#) object

*Usage:*

```
WPSStatus$new(xml = NULL, serviceVersion = "1.0.0")
```

*Arguments:*

xml an object of class [XMLInternalNode-class](#) from **XML**  
serviceVersion WPS service version. Default is "1.0.0"

**Method decode():** Decodes WPS status from XML

*Usage:*

```
WPSStatus$decode(xml)
```

*Arguments:*

xml an object of class [XMLInternalNode-class](#) from **XML**

**Method getValue():** Get status value, among accepted WPS status values defined in the WPS standard: ProcessAccepted, ProcessStarted, ProcessPaused, ProcessSucceeded, ProcessFailed.

*Usage:*

```
WPSStatus$getValue()
```

*Returns:* value, object of class character

**Method getPercentCompleted():** Get percentage of completion

*Usage:*

```
WPSStatus$getPercentCompleted()
```

*Returns:* the percentage of completion, object of class integer

**Method getCreationTime():** Get creation time

*Usage:*

```
WPSStatus$getCreationTime()
```

*Returns:* the creation time, object of class POSIXct

**Method clone():** The objects of this class are cloneable with this method.

*Usage:*

```
WPSStatus$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

#### **Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

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