

# Package ‘rsdmx’

July 23, 2025

**Version** 0.6-5

**Date** 2025-02-27

**Title** Tools for Reading SDMX Data and Metadata

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**Depends** R (>= 2.15)

**Imports** R6, methods, XML (>= 3.98-1.3), httr, plyr, utils

**Suggests** testthat, knitr, roxygen2, markdown

**Description** Set of classes and methods to read data and metadata documents exchanged through the Statistical Data and Metadata Exchange (SDMX) framework, currently focusing on the SDMX XML standard format (SDMX-ML).

**License** GPL (>= 2)

**VignetteBuilder** knitr

**URL** <https://github.com/opensdmx/rsdmx>, <https://sdmx.org>

**BugReports** <https://github.com/opensdmx/rsdmx/issues>

**LazyLoad** yes

**Encoding** UTF-8

**Collate** rsdmx\_logger.R Class-SDMXSchema.R Class-SDMXType.R  
Class-SDMXStructureType.R Class-SDMXHeader.R  
Class-SDMXFooterMessage.R Class-SDMXFooter.R Class-SDMX.R  
Class-SDMXConcept.R Class-SDMXConceptScheme.R  
Class-SDMXConcepts.R Class-SDMXCode.R Class-SDMXCodelist.R  
Class-SDMXCodelists.R Class-SDMXDimension.R  
Class-SDMXTimeDimension.R Class-SDMXPrimaryMeasure.R  
Class-SDMXAttribute.R Class-SDMXComponents.R  
Class-SDMXDataStructure.R Class-SDMXDataStructures.R  
Class-SDMXOrganisation.R Class-SDMXAgency.R  
Class-SDMXItemScheme.R Class-SDMXOrganisationScheme.R  
Class-SDMXAgencyScheme.R Class-SDMXOrganisationSchemes.R  
Class-SDMXDataStructureDefinition.R Class-SDMXData.R  
Class-SDMXGenericData.R Class-SDMXCompactData.R  
Class-SDMXUtilityData.R Class-SDMXStructureSpecificData.R

Class-SDMXStructureSpecificTimeSeriesData.R  
 Class-SDMXCrossSectionalData.R Class-SDMXMessageGroup.R  
 Class-SDMXDataFlow.R Class-SDMXDataFlows.R  
 Class-SDMXRequestParams.R Class-SDMXRequestBuilder.R  
 Class-SDMXREST20RequestBuilder.R  
 Class-SDMXREST21RequestBuilder.R  
 Class-SDMXDotStatRequestBuilder.R Class-SDMXServiceProvider.R  
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 SDMXCrossSectionalData-methods.R SDMXMessageGroup-methods.R  
 SDMXDataFlow-methods.R SDMXDataFlows-methods.R  
 SDMXRequestParams-methods.R SDMXRequestBuilder-methods.R  
 SDMXREST20RequestBuilder-methods.R  
 SDMXREST21RequestBuilder-methods.R  
 SDMXDotStatRequestBuilder-methods.R  
 SDMXServiceProvider-methods.R SDMXServiceProviders-methods.R  
 readSDMX.R saveSDMX.R profile.R rsdmx.R

**RoxygenNote** 7.3.1

**NeedsCompilation** no

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**Repository** CRAN

**Date/Publication** 2025-02-27 11:00:05 UTC

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addSDMXServiceProvider

*addSDMXServiceProvider*

### Description

function that allows configuring a new [SDMXServiceProvider](#) as part of the list of providers known by `r sdmx`, hence by [readSDMX](#)

### Usage

```
addSDMXServiceProvider(provider)
```

### Arguments

provider            an object of class "SDMXServiceProvider"

### Author(s)

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

### See Also

[getSDMXServiceProviders](#) [findSDMXServiceProvider](#) [readSDMX](#)

### Examples

```
#create a provider
myBuilder <- SDMXREST20RequestBuilder(regUrl = "http://www.myorg.org/registry",
                                     repoUrl = "http://www.myorg.org/repository",
                                     compliant = TRUE)

myProvider <- SDMXServiceProvider(
  agencyId = "MYORG", name = "My Organization",
  builder = myBuilder
)

#add it
addSDMXServiceProvider(myProvider)
```

```
#check out the list of existing provider (only list the agency Ids)
sapply(slot(getSDMXServiceProviders(), "providers"), function(x){slot(x, "agencyId")})
```

---

findNamespace	<i>findNamespace</i>
---------------	----------------------

---

### Description

function used to find a specific namespace within the available namespaces of an SDMX-ML object

### Usage

```
findNamespace(namespaces, messageType)
```

### Arguments

namespaces	object of class <code>data.frame</code> giving the namespaces URIs available in a SDMX-ML object, typically obtained with <a href="#">getNamespaces</a>
messageType	object of class <code>character</code> representing a message type

### Value

an object of class `"character"` giving the namespace uri if found in the available namespaces

### Warning

`findNamespace` is a function used internally as utility function in SDMX-ML object parsers.

### Author(s)

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

### See Also

[SDMX-class getNamespaces](#)

findSDMXServiceProvider  
*findSDMXServiceProvider*

---

**Description**

function that allows searching by provider id in the list of known [SDMXServiceProvider](#). This function can be used for interrogating the list of default providers known by **rsdmx**, and is used internally by [readSDMX](#)

**Usage**

```
findSDMXServiceProvider(agencyId)
```

**Arguments**

agencyId            an object of class "character" representing a provider identifier

**Value**

an object of class "SDMXServiceProvider" (or NULL if no matching)

**Author(s)**

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

**See Also**

[getSDMXServiceProviders](#) [addSDMXServiceProvider](#) [readSDMX](#)

**Examples**

```
#find OECD provider  
oecd.provider <- findSDMXServiceProvider("OECD")
```

---

getNamespaces            *getNamespaces*

---

**Description**

Access the namespaces of the SDMX-ML object

**Usage**

```
getNamespaces(obj)  
  
## S4 method for signature 'SDMX'  
getNamespaces(obj)
```

**Arguments**

obj                    An object deriving from class "SDMX"

**Value**

an object of class `data.frame` giving the id and uri for each of the namespaces handled in the SDMX-ML document.

**Author(s)**

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

**See Also**

[SDMX-class](#)

---

`getRegistryInterfaceResult`  
*getRegistryInterfaceResult*

---

**Description**

function used to extract the SDMX-ML message from a registry interface query

**Usage**

```
getRegistryInterfaceResult(xmlObj)
```

**Arguments**

xmlObj                object of class "XMLInternalDocument derived from XML package"

**Value**

an object of class "XMLInternalDocument derived from XML package"

**Warning**

`getRegistryInterfaceResult` is a function used internally by [readSDMX](#)

**Author(s)**

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

**See Also**

[SDMX-class readSDMX](#)

---

getSDMXServiceProviders

*getSDMXServiceProviders*

---

**Description**

function used to get the list of [SDMXServiceProvider](#) known by **rsdmx** (hence known by [readSDMX](#) to query data or metadata in an easier way). This function can be easily used to interrogate the list of known providers, and eventually consider adding one at runtime with [addSDMXServiceProvider](#)

**Usage**

```
getSDMXServiceProviders()
```

**Value**

an object of class "list" (of [SDMXServiceProvider](#))

**Author(s)**

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

**See Also**

[addSDMXServiceProvider](#) [findSDMXServiceProvider](#) [readSDMX](#)

---

getSoapRequestResult *getSoapRequestResult*

---

**Description**

function used to extract the SDMX-ML message from a SOAP request response

**Usage**

```
getSoapRequestResult(xmlObj)
```



**Arguments**

xmlObj            object of class "XMLInternalDocument derived from XML package"

**Value**

an object of class "XMLInternalDocument derived from XML package"

**Warning**

getSoapRequestResult is a function used internally by [readSDMX](#)

**Author(s)**

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

**See Also**

[SDMX-class readSDMX](#)

---

getStructureType        *getStructureType*

---

**Description**

getStructureType

**Usage**

```
getStructureType(obj)

## S4 method for signature 'SDMXStructureType'
getStructureType(obj)
```

**Arguments**

obj                object of class "SDMX"

---

`isRegistryInterfaceEnvelope`  
*isRegistryInterfaceEnvelope*

---

**Description**

function used to detect if the XML document corresponds to a registry interface query

**Usage**

```
isRegistryInterfaceEnvelope(xmlObj, nativeRoot)
```

**Arguments**

<code>xmlObj</code>	object of class "XMLInternalDocument derived from XML package"
<code>nativeRoot</code>	object of class "logical" indicating if it is the native document

**Value**

an object of class "logical"

**Warning**

`isRegistryInterfaceEnvelope` is a function used internally by [readSDMX](#)

**Author(s)**

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

**See Also**

[SDMX-class readSDMX](#)

---

`isSoapRequestEnvelope` *isSoapRequestEnvelope*

---

**Description**

function used to detect if the XML document corresponds to a SOAP request response

**Usage**

```
isSoapRequestEnvelope(xmlObj, namespaces)
```

**Arguments**

xmlObj	object of class "XMLInternalDocument derived from XML package"
namespaces	object of class "data.frame" given the list of namespace URIs

**Value**

an object of class "logical"

**Warning**

isSoapRequestEnvelope is a function used internally by [readSDMX](#)

**Author(s)**

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

**See Also**

[SDMX-class readSDMX](#)

---

readSDMX

*readSDMX*


---

**Description**

readSDMX is the main function to use to read SDMX data

**Usage**

```
readSDMX(file = NULL, isURL = TRUE, isRData = FALSE,
  provider = NULL, providerId = NULL, providerKey = NULL,
  agencyId = NULL, resource = NULL, resourceId = NULL, version = NULL,
  flowRef = NULL, key = NULL, key.mode = "R", start = NULL, end = NULL, dsd = FALSE,
  headers = list(), validate = FALSE, references = NULL,
  verbose = !is.null(logger), logger = "INFO", ...)
```

**Arguments**

file	path to SDMX-ML document that needs to be parsed
isURL	a value of class "logical" either the path is an url, and data has to be downloaded from a SDMXweb-repository. Default value is TRUE. Ignored in case readSDMX is used with helpers (based on the embedded list of SDMXServiceProvider)
isRData	a value of class "logical" either the path is local RData file handling an object of class "SDMX", previously saved with <a href="#">saveSDMX</a> . Default value is FALSE.
provider	an object of class "SDMXServiceProvider". If specified, file and isURL arguments will be ignored.

providerId	an object of class "character" representing a provider id. It has to be match a default provider as listed in <code>getSDMXServiceProviders()</code>
providerKey	an object of class "character" giving a key to authenticate for the given provider endpoint. Some providers may require an authentication or subscription key to perform SDMX requests.
agencyId	an object of class "character" representing an agency id, for which data should be requested (from a particular service provider)
resource	an object of class "character" giving the SDMX service request resource to query e.g. "data". Recognized if a valid provider or provide id has been specified as argument.
resourceId	an object of class "character" giving a SDMX service resource Id, e.g. the id of a data structure
version	an object of class "character" giving a SDMX resource version, e.g. the version of a dataflow.
flowRef	an object of class "character" giving the SDMX flow ref id. Recognized if valid provider or provide id has been specified as argument.
key	an object of class "character" or "list" giving the SDMX data key/filter to apply. Recognized if a valid provider or provide id has been specified as argument. If <code>key.mode</code> is equal to "R" (default value), filter has to be an object of class "list" representing the filters to apply to the dataset, otherwise the filter will be a string.
key.mode	an object of class "character" indicating if the key has to be provided as an R object, ie a object of class "list" representing the filter(s) to apply. Default value is "R". Alternative value is "SDMX"
start	an object of class "integer" or "character" giving the SDMX start time to apply. Recognized if a valid provider or provide id has been specified as argument.
end	an object of class "integer" or "character" giving the SDMX end time to apply. Recognized if a valid provider or provide id has been specified as argument.
dsd	an Object of class "logical" if an attempt to inherit the DSD should be performed. Active only if "readSDMX" is used as helper method (ie if data is fetched using an embedded service provider. Default is FALSE
headers	an object of class "list" that contains any additional headers for the request.
validate	an object of class "logical" indicating if a validation check has to be performed on the SDMX-ML document to check its SDMX compliance when reading it. Default is FALSE.
references	an object of class "character" giving the instructions to return (or not) the artefacts referenced by the artefact to be returned.
verbose	an Object of class "logical" that indicates if <code>rsdmx</code> logs should appear to user. Default is set to FALSE (see argument <code>logger</code> ).
logger	reports if a logger has to be used to print log messages. Default is NULL (no logs). Use "INFO" to print <b>rsdmx</b> logs, and "DEBUG" to print verbose messages from SDMX web requests.
...	(any other parameter to pass to <code>httr::GET</code> request)

**Value**

an object of class "SDMX"

**Author(s)**

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

**Examples**

```
# SDMX datasets
#-----
## Not run:
# Not run
# (local dataset examples)
#with SDMX 2.0
tmp <- system.file("extdata","Example_Eurostat_2.0.xml", package="rsdmx")
sdmx <- readSDMX(tmp, isURL = FALSE)
stats <- as.data.frame(sdmx)
head(stats)

#with SDMX 2.1
tmpnew <- system.file("extdata","Example_Eurostat_2.1.xml", package="rsdmx")
sdmx <- readSDMX(tmpnew, isURL = FALSE)
stats <- as.data.frame(sdmx)
head(stats)
## End(**Not run**)

## End(Not run)

## Not run:
# Not run by 'R CMD check'
# (reliable remote datasource but with possible occasional unavailability)

#examples using embedded providers
sdmx <- readSDMX(providerId = "OECD", resource = "data", flowRef = "MIG",
                 key = list("TOT", NULL, NULL), start = 2011, end = 2011)
stats <- as.data.frame(sdmx)
head(stats)

#examples using 'file' argument
#using url (Eurostat REST SDMX 2.1)
url <- paste("http://ec.europa.eu/eurostat/SDMX/diss-web/rest/data/",
            "cdh_e_fos/all/?startperiod=2000&endPeriod=2010",
            sep = "")
sdmx <- readSDMX(url)
stats <- as.data.frame(sdmx)
head(stats)

## End(**Not run**)

## End(Not run)
```

```
# SDMX DataStructureDefinition (DSD)
#-----
## Not run:
# Not run by 'R CMD check'
# (reliable remote datasource but with possible occasional unavailability)

#using embedded providers
dsd <- readSDMX(providerId = "OECD", resource = "datastructure",
                resourceId = "WATER_ABSTRACT")

#get codelists from DSD
cls <- slot(dsd, "codelists")
codelists <- sapply(slot(cls,"codelists"), slot, "id") #get list of codelists

#get a codelist
codelist <- as.data.frame(cls, codelistId = "CL_WATER_ABSTRACT_SOURCE")

#get concepts from DSD
concepts <- as.data.frame(slot(dsd, "concepts"))

## End(**Not run**)

## End(Not run)
```

---

rsdmx

*Tools for Reading SDMX Data and Metadata*

---

## Description

RSDMX is a package to parse/read SDMX documents in R. It provides: - a set of classes and methods to read data and metadata documents exchanged through the Statistical Data and Metadata Exchange (SDMX) framework. The package currently focuses on the SDMX XML standard format (SDMX-ML). - an web-service interface to well-known SDMX data providers

## Author(s)

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

## See Also

Useful links:

- <https://github.com/opensdmx/rsdmx>
- <https://sdmx.org>
- Report bugs at <https://github.com/opensdmx/rsdmx/issues>

---

rsdmxLogger

*rsdmxLogger*

---

### Description

rsdmxLogger

### Value

Object for modelling a simple logger

### Abstract Methods

INFO(text) Logger to report information. Used internally

WARN(text) Logger to report warnings. Used internally

ERROR(text) Logger to report errors. Used internally

### Note

Logger class used internally by rsdmx

---

saveSDMX

*saveSDMX*

---

### Description

saveSDMX is the function to save R SDMX object

### Usage

```
saveSDMX(sdmxObj, file)
```

### Arguments

sdmxObj            an object of class [SDMX-class](#) to save

file                a connection or the name of the file where the R object is saved to

### Author(s)

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

## Examples

```
sdmx <- system.file("extdata", "Example_Eurostat_2.0.xml", package="rsdmx")
sf <- tempfile(fileext = ".rda")
saveSDMX(sdmx, sf)
```

---

SDMX

*Class "SDMX"*


---

## Description

An abstract class from which SDMX classes are derived

## Usage

```
SDMX(xmlObj, namespaces)
```

## Arguments

xmlObj            object of class "XMLInternalDocument" derived from XML package  
namespaces        object of class "data.frame" given the list of namespace URIs

## Value

an object of class "SDMX"

## Slots

xmlObj    Object of class "XMLInternalDocument" derived from XML package  
schema    Object of class "SDMXSchema", handles the version of SDMX-ML format  
header    Object of class "SDMXHeader", handles the SDMX-ML document header  
footer    Object of class "SDMXFooter", handles the SDMX-ML document footer

## Warning

This class is not useful in itself, but all SDMX classes in this package derive from it.

## Note

Currently, the approach drafted in [rsdmx](#) package was to rely on XML package, read the xml object and store it as part of the SDMX R object. Another approach being investigated is to use XML handlers through the Simple API for XML (SAX) that could avoid to load the full XML tree in the SDMX R object (xmlObj). Indeed, SDMX data could be huge and causes issues of memory if the complete XML tree is loaded in the R user session.

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



**See Also**[readSDMX](#)

---

SDMXAgency	<i>Class "SDMXAgency"</i>
------------	---------------------------

---

**Description**

A basic class to handle a SDMX Concept

**Usage**

```
SDMXAgency(xmlObj, namespaces)
```

**Arguments**

xmlObj	object of class "XMLInternalDocument derived from XML package"
namespaces	object of class "data.frame" given the list of namespace URIs

**Value**

an object of class "SDMXAgency"

**Author(s)**

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

**See Also**[readSDMX](#)

---

SDMXAgencyScheme	<i>Class "SDMXAgencyScheme"</i>
------------------	---------------------------------

---

**Description**

A basic abstract class to handle a SDMXAgencyScheme

**Usage**

```
SDMXAgencyScheme(xmlObj, namespaces)
```

**Arguments**

xmlObj	object of class "XMLInternalDocument derived from XML package"
namespaces	object of class "data.frame" given the list of namespace URIs

**Value**

an object of class "SDMXAgencyScheme"

**Slots**

id Object of class "character" giving the ID of the concept scheme (required)  
 agencyID Object of class "character" giving the AgencyID  
 version Object of class "character" giving the version  
 uri Object of class "character" giving the concept uri  
 urn Object of class "character" giving the concept urn  
 isExternalReference Object of class "logical" indicating if the concept scheme is an external reference  
 isFinal Object of class "logical" indicating if the concept scheme is final  
 validFrom Object of class "character" indicating the start validity period  
 validTo Object of class "character" indicating the end validity period  
 Name Object of class "list" giving the agency scheme name (by language) - required  
 Description Object of class "list" giving the agency scheme description (by language)  
 agencies object of class "list" giving the list of SDMXAgency

**Author(s)**

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

**See Also**

[readSDMX](#)

---

SDMXAttribute

*Class "SDMXAttribute"*

---

**Description**

A basic class to handle a SDMX Attribute

**Usage**

```
SDMXAttribute(xmlObj, namespaces)
```

**Arguments**

xmlObj	object of class "XMLInternalDocument derived from XML package"
namespaces	object of class "data.frame" given the list of namespace URIs

**Value**

an object of class "SDMXAttribute"

**Slots**

conceptRef Object of class "character" giving the attribute conceptRef (required)  
 conceptVersion Object of class "character" giving the attribute concept version  
 conceptAgency Object of class "character" giving the attribute concept agency  
 conceptSchemeRef Object of class "character" giving the attribute conceptScheme ref  
 conceptSchemeAgency Object of class "character" giving the attribute conceptScheme agency  
 codelist Object of class "character" giving the codelist ref name  
 codelistVersion Object of class "character" giving the codelist ref version  
 codelistAgency Object of class "character" giving the codelist ref agency  
 attachmentLevel Object of class "character" giving the attachment level (e.g. DataSet)  
 assignmentStatus Object of class "character" giving the assignment status (e.g. Mandatory)  
 isTimeFormat Object of class "logical"  
 crossSectionalAttachDataset Object of class "logical"  
 crossSectionalAttachGroup Object of class "logical"  
 crossSectionalAttachSection Object of class "logical"  
 crossSectionalAttachObservation Object of class "logical"  
 isEntityAttribute Object of class "logical" indicating if the Attribute is an entity Attribute.  
 Default value is FALSE  
 isNonObservationTimeAttribute Object of class "logical" indicating if the Attribute is a non-  
 observation Attribute. Default value is FALSE  
 isCountAttribute Object of class "logical" indicating if the Attribute is a count Attribute. Default  
 value is FALSE  
 isFrequencyAttribute Object of class "logical" indicating if the Attribute is a frequency At-  
 tribute. Default value is FALSE  
 isIdentityAttribute Object of class "logical" indicating if the Attribute is an identity Attribute.  
 Default value is FALSE

**Warning**

This class is not useful in itself, but all SDMX non-abstract classes will encapsulate it as slot, when parsing an SDMX-ML document (DataStructures, or DataStructureDefinitions)

**Author(s)**

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

**See Also**

[readSDMX](#)

---

SDMXCode

Class "SDMXCode"

---

### Description

A basic class to handle a SDMX Code

### Usage

```
SDMXCode(xmlObj, namespaces)
```

### Arguments

xmlObj	object of class "XMLInternalDocument derived from XML package"
namespaces	object of class "data.frame" given the list of namespace URIs

### Value

an object of class "SDMXCode"

### Slots

id Object of class "character" giving the ID of the code (required). In SDMX 2.0 documents, this slot will handle the 'value' attribute

urn Object of class "character" giving the code urn

parentCode Object of class "character" giving the parent code

label Object of class "list" giving the code label (by language). In SDMX 2.0, it takes the code 'Description' element vs. 'Name' element in SDMX 2.1. This property deprecated and kept now for backward compatibility.

name Object of class "list" giving the code name (by language).

description Object of class "list" giving the code description (by language).

### Warning

This class is not useful in itself, but all SDMX non-abstract classes will encapsulate it as slot, when parsing an SDMX-ML document (Codelists, or DataStructureDefinition)

### Author(s)

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

### See Also

[readSDMX](#)

---

SDMXCodelist

Class "*SDMXCodelist*"

---

**Description**

A basic class to handle a SDMX Codelist

**Usage**

```
SDMXCodelist(xmlObj, namespaces)
```

**Arguments**

xmlObj	object of class "XMLInternalDocument derived from XML package"
namespaces	object of class "data.frame" given the list of namespace URIs

**Value**

an object of class "SDMXCodelist"

**Slots**

id Object of class "character" giving the ID of the codelist (required)  
agencyID Object of class "character" giving the AgencyID  
version Object of class "character" giving the version  
uri Object of class "character" giving the codelist uri  
urn Object of class "character" giving the codelist urn  
isExternalReference Object of class "logical" indicating if the codelist is an external reference  
isFinal Object of class "logical" indicating if the codelist is final  
validFrom Object of class "character" indicating the start validity period  
validTo Object of class "character" indicating the end validity period  
Name Object of class "list" giving the codelist (by language) - required  
Description Object of class "list" giving the codelist description (by language)  
Code Object of class "list" giving the list of "SDMXCode" objects included in the codelist (see [SDMXCode](#))

**Warning**

This class is not useful in itself, but all SDMX non-abstract classes will encapsulate it as slot, when parsing an SDMX-ML document (Codelists, or DataStructureDefinition)

**Author(s)**

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

**See Also**[readSDMX](#)

---

SDMXCodelists	<i>Class "SDMXCodelists"</i>
---------------	------------------------------

---

**Description**

A basic class to handle SDMX Codelists

**Usage**

```
SDMXCodelists(xmlObj, namespaces)
```

**Arguments**

xmlObj	object of class "XMLInternalDocument derived from XML package"
namespaces	object of class "data.frame" given the list of namespace URIs

**Value**

an object of class "SDMXCodelists"

**Slots**

codelists Object of class "list" giving the list of "SDMXCodelist"

**Warning**

This class is not useful in itself, but [SDMXDataStructureDefinition](#) objects will encapsulate it as slot, when parsing an SDMX-ML document.

**Author(s)**

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

**See Also**[readSDMX](#)

---

SDMXCompactData      *Class "SDMXCompactData"*

---

**Description**

A basic class to handle a SDMX-ML compact data set

**Usage**

```
SDMXCompactData(xmlObj, namespaces)
```

**Arguments**

xmlObj	object of class "XMLInternalDocument derived from XML package"
namespaces	object of class "data.frame" given the list of namespace URIs

**Value**

an object of class "SDMXCompactData"

**Author(s)**

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

**See Also**

[readSDMX](#)

---

SDMXComponents      *Class "SDMXComponents"*

---

**Description**

A basic class to handle SDMX Components

**Usage**

```
SDMXComponents(xmlObj, namespaces)
```

**Arguments**

xmlObj	object of class "XMLInternalDocument derived from XML package"
namespaces	object of class "data.frame" given the list of namespace URIs

**Value**

an object of class "SDMXComponents"

**Slots**

Dimensions Object of class "list" giving the list of dimensions (see [SDMXDimension](#))

TimeDimension Object of class "SDMXTimeDimension"

PrimaryMeasure Object of class "SDMXPrimaryMeasure"

Attributes Object of class "list" giving the list of attributes (see [SDMXAttribute](#))

**Warning**

This class is not useful in itself, but all SDMX non-abstract classes will encapsulate it as slot, when parsing an SDMX-ML document (DataStructures, or DataStructureDefinitions)

**Author(s)**

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

**See Also**

[readSDMX](#)

---

SDMXConcept

*Class "SDMXConcept"*

---

**Description**

A basic class to handle a SDMX Concept

**Usage**

```
SDMXConcept(xmlObj, namespaces)
```

**Arguments**

xmlObj object of class "XMLInternalDocument" derived from XML package

namespaces object of class "data.frame" given the list of namespace URIs

**Value**

an object of class "SDMXConcept"



**Slots**

id Object of class "character" giving the ID of the concept (required)  
 agencyID Object of class "character" giving the AgencyID  
 version Object of class "character" giving the concept version  
 uri Object of class "character" giving the concept uri  
 urn Object of class "character" giving the concept urn  
 isExternalReference Object of class "logical" indicating if the concept is an external reference  
 coreRepresentation Object of class "character" giving the core representation  
 coreRepresentationAgency Object of class "character" giving the core representation agency  
 parent Object of class "character" giving the concept parent  
 parentAgency Object of class "character" giving the parentAgency  
 Name Object of class "list" giving the concept name (by language) - required  
 Description Object of class "list" giving the concept description (by language)

**Warning**

This class is not useful in itself, but all SDMX non-abstract classes will encapsulate it as slot, when parsing an SDMX-ML document (Concepts, or DataStructureDefinition)

**Author(s)**

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

**See Also**

[readSDMX](#)

---

SDMXConcepts

*Class "SDMXConcepts"*

---

**Description**

A basic class to handle SDMX Concepts

**Usage**

```
SDMXConcepts(xmlObj, namespaces)
```

**Arguments**

xmlObj	object of class "XMLInternalDocument derived from XML package
namespaces	object of class "data.frame" given the list of namespace URIs

**Value**

an object of class "SDMXConcepts"

**Slots**

`concepts` Object of class "list" giving the list of "SDMXConcept". This slot is available to ensure backward compatibility with SDMX 1.0 in SDMX 2.0 or 2.1 documents

`conceptSchemes` Object of class "list" giving the list of "SDMXConceptScheme", which will encapsulate the list of "SDMXConcept" (defined from SDMX 2.0)

**Warning**

This class is not useful in itself, but all SDMX non-abstract classes will encapsulate it as slot, when parsing an SDMX-ML document (Concepts, or DataStructureDefinition)

**Author(s)**

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

**See Also**

[readSDMX](#)

---

SDMXConceptScheme      *Class "SDMXConceptScheme"*

---

**Description**

A basic class to handle a SDMX Concept scheme

**Usage**

```
SDMXConceptScheme(xmlObj, namespaces)
```

**Arguments**

<code>xmlObj</code>	object of class "XMLInternalDocument derived from XML package"
<code>namespaces</code>	object of class "data.frame" given the list of namespace URIs

**Value**

an object of class "SDMXConceptScheme"

**Slots**

id Object of class "character" giving the ID of the concept scheme (required)  
 agencyID Object of class "character" giving the AgencyID  
 version Object of class "character" giving the version  
 uri Object of class "character" giving the concept uri  
 urn Object of class "character" giving the concept urn  
 isExternalReference Object of class "logical" indicating if the concept scheme is an external reference  
 isFinal Object of class "logical" indicating if the concept scheme is final  
 validFrom Object of class "character" indicating the start validity period  
 validTo Object of class "character" indicating the end validity period  
 Name Object of class "list" giving the concept scheme name (by language) - required  
 Description Object of class "list" giving the concept scheme description (by language)  
 Concept Object of class "list" giving the list of "SDMXConcept" objects (see [SDMXConcept](#))

**Warning**

This class is not useful in itself, but all SDMX non-abstract classes will encapsulate it as slot, when parsing an SDMX-ML document (Concepts, or DataStructureDefinition)

**Author(s)**

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

**See Also**

[readSDMX](#)

---

SDMXCrossSectionalData

*Class "SDMXCrossSectionalData"*

---

**Description**

A basic class to handle a SDMX-ML cross sectional data set

**Usage**

```
SDMXCrossSectionalData(xmlObj, namespaces)
```

**Arguments**

xmlObj	object of class "XMLInternalDocument derived from XML package
namespaces	object of class "data.frame" given the list of namespace URIs

**Value**

an object of class "SDMXCrossSectionalData"

**Author(s)**

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

**See Also**

[readSDMX](#)

---

SDMXData

*Class "SDMXData"*

---

**Description**

An abstract class from which SDMX Data classes are derived

**Usage**

```
SDMXData(xmlObj, namespaces)
```

**Arguments**

xmlObj	object of class "XMLInternalDocument derived from XML package"
namespaces	object of class "data.frame" given the list of namespace URIs

**Value**

an object of class "SDMXData"

**Slots**

dsdRef Object of class "character" giving the DSD Reference  
dsd Object of class "SDMXDataStructureDefinition"

**Warning**

This class is not useful in itself, but all SDMX Data classes in this package derive from it.

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

**See Also**

[readSDMX](#)

---

SDMXDataFlow	Class "SDMXDataFlow"
--------------	----------------------

---

**Description**

A basic class to handle a SDMX DataFlow

**Usage**

```
SDMXDataFlow(xmlObj, namespaces)
```

**Arguments**

xmlObj	object of class "XMLInternalDocument derived from XML package"
namespaces	object of class "data.frame" given the list of namespace URIs

**Value**

an object of class "SDMXDataFlow"

**Slots**

id	Object of class "character" giving the ID (required)
agencyID	Object of class "character" giving the AgencyID
version	Object of class "character" giving the version
uri	Object of class "character" giving the uri
urn	Object of class "character" giving the urn
isExternalReference	Object of class "logical" indicating if the dataflow is an external reference
isFinal	Object of class "logical" indicating if the dataflow is final
validFrom	Object of class "character" indicating the start validity period
validTo	Object of class "character" indicating the end validity period
Name	Object of class "list" giving the dataflow (by available language) - required
Description	Object of class "list" giving the dataflow description (by available language)
dsdRef	Object of class "character" giving the reference datastructure Id
dsd	Object of class "SDMXDataStructureDefinition"

**Warning**

This class is not useful in itself, but all SDMX non-abstract classes will encapsulate it as slot, when parsing an SDMX-ML document (Concepts, or DataStructureDefinition)

**Author(s)**

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

**See Also**[readSDMX](#)

---

`SDMXDataFlows`*Class "SDMXDataFlows"*

---

**Description**

A basic class to handle a SDMX DataFlows

**Usage**

```
SDMXDataFlows(xmlObj, namespaces)
```

**Arguments**

<code>xmlObj</code>	object of class "XMLInternalDocument derived from XML package"
<code>namespaces</code>	object of class "data.frame" given the list of namespace URIs

**Value**

an object of class "SDMXDataFlows"

**Slots**

`dataflows` Object of class "list" giving the list of DataFlows (datasets), (see [SDMXDataFlow](#))

**Warning**

This class is not useful in itself, but all SDMX non-abstract classes will encapsulate it as slot, when parsing an SDMX-ML document (Concepts, or DataStructureDefinition)

**Author(s)**

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

**See Also**[readSDMX](#)

---

SDMXDataStructure      *Class "SDMXDataStructure"*

---

**Description**

A basic class to handle a SDMX DataStructure (or KeyFamily)

**Usage**

```
SDMXDataStructure(xmlObj, namespaces)
```

**Arguments**

xmlObj	object of class "XMLInternalDocument derived from XML package"
namespaces	object of class "data.frame" given the list of namespace URIs

**Value**

an object of class "SDMXDataStructure"

**Slots**

id Object of class "character" giving the ID (required)  
agencyID Object of class "character" giving the AgencyID  
version Object of class "character" giving the version  
uri Object of class "character" giving the uri  
urn Object of class "character" giving the urn  
isExternalReference Object of class "logical" indicating if the datastructure / keyfamily is an external reference  
isFinal Object of class "logical" indicating if the datastructure / keyfamily is final  
validFrom Object of class "character" indicating the start validity period  
validTo Object of class "character" indicating the end validity period  
Name Object of class "list" giving the codelist (by language) - required  
Description Object of class "list" giving the codelist description (by language)  
Components Object of class "SDMXComponents" (see [SDMXComponents](#))

**Warning**

This class is not useful in itself, but all SDMX non-abstract classes will encapsulate it as slot, when parsing an SDMX-ML document (Concepts, or DataStructureDefinition)

**Author(s)**

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

**See Also**[readSDMX](#)

---

SDMXDataStructureDefinition

*Class "SDMXDataStructureDefinition"*

---

**Description**

A basic class to handle a SDMX DataStructureDefinition (DSD)

**Usage**

```
SDMXDataStructureDefinition(xmlObj, namespaces)
```

**Arguments**

xmlObj	object of class "XMLInternalDocument derived from XML package"
namespaces	object of class "data.frame" given the list of namespace URIs

**Value**

an object of class "SDMXDataStructureDefinition"

**Slots**

organisationSchemes Object of class "SDMXOrganisationSchemes" giving the list of agencies (see [SDMXAgencyScheme](#) and [SDMXAgency](#))

concepts Object of class "SDMXConcepts" giving the list of concepts or conceptSchemes (see [SDMXConcepts](#))

codelists Object of class "SDMXCodelists" giving the list of codelists (see [SDMXCodelists](#))

datastructures Object of class "SDMXDataStructures" giving the list of datastructures /key families (see [SDMXDataStructures](#))

**Warning**

This class is not useful in itself, but all SDMX non-abstract classes will encapsulate it as slot, when parsing an SDMX-ML document (Concepts, or DataStructureDefinition)

**Author(s)**

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

**See Also**[readSDMX](#)



---

SDMXDataStructures      *Class "SDMXDataStructures"*

---

**Description**

A basic class to handle a SDMX DataStructures (or KeyFamilies)

**Usage**

```
SDMXDataStructures(xmlObj, namespaces)
```

**Arguments**

xmlObj	object of class "XMLInternalDocument derived from XML package"
namespaces	object of class "data.frame" given the list of namespace URIs

**Value**

an object of class "SDMXDataStructures"

**Slots**

datastructures Object of class "list" giving the list of DataStructures, (see [SDMXDataStructure](#))

**Warning**

This class is not useful in itself, but all SDMX non-abstract classes will encapsulate it as slot, when parsing an SDMX-ML document (Concepts, or DataStructureDefinition)

**Author(s)**

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

**See Also**

[readSDMX](#)

---

SDMXDimension	Class "SDMXDimension"
---------------	-----------------------

---

**Description**

A basic class to handle a SDMX Dimension

**Usage**

```
SDMXDimension(xmlObj, namespaces)
```

**Arguments**

xmlObj	object of class "XMLInternalDocument derived from XML package"
namespaces	object of class "data.frame" given the list of namespace URIs

**Value**

an object of class "SDMXDimension"

**Slots**

conceptRef Object of class "character" giving the dimension conceptRef (required)

conceptVersion Object of class "character" giving the dimension concept version

conceptAgency Object of class "character" giving the dimension concept agency

conceptSchemeRef Object of class "character" giving the dimension conceptScheme ref

conceptSchemeAgency Object of class "character" giving the dimension conceptScheme agency

odelist Object of class "character" giving the codelist ref name

odelistVersion Object of class "character" giving the codelist ref version

odelistAgency Object of class "character" giving the codelist ref agency

isMeasureDimension Object of class "logical" indicating if the dimension is a measure dimension.  
Default value is FALSE

isFrequencyDimension Object of class "logical" indicating if the dimension is a frequency dimension.  
Default value is FALSE

isEntityDimension Object of class "logical" indicating if the dimension is an entity dimension.  
Default value is FALSE

isCountDimension Object of class "logical" indicating if the dimension is a count dimension.  
Default value is FALSE

isNonObservationTimeDimension Object of class "logical" indicating if the dimension is a non-observation dimension.  
Default value is FALSE

isIdentityDimension Object of class "logical" indicating if the dimension is an identity dimension.  
Default value is FALSE

crossSectionalAttachDataset Object of class "logical"

crossSectionalAttachGroup Object of class "logical"  
 crossSectionalAttachSection Object of class "logical"  
 crossSectionalAttachObservation Object of class "logical"

**Warning**

This class is not useful in itself, but all SDMX non-abstract classes will encapsulate it as slot, when parsing an SDMX-ML document (Concepts, or DataStructureDefinition)

**Author(s)**

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

**See Also**

[readSDMX](#)

---

SDMXDotStatRequestBuilder

*Class "SDMXDotStatRequestBuilder"*

---

**Description**

A experimental class to handle a SDMX DotStat (\*.Stat) service request builder

**Usage**

```
SDMXDotStatRequestBuilder(regUrl, repoUrl, accessKey = NULL, formatter = NULL,
  unsupportedResources = list(), skipProviderId = FALSE, forceProviderId = FALSE,
  headers = list())
```

**Arguments**

regUrl	an object of class "character" giving the base Url of the SDMX service registry
repoUrl	an object of class "character" giving the base Url of the SDMX service repository
accessKey	an object of class "character" indicating the name of request parameter for which an authentication or subscription user key (token) has to be provided to perform requests
formatter	an object of class "list" giving a formatting function (for each resource) that takes an object of class "SDMXRequestParams" as single argument. Such parameter allows to customize eventual params (e.g. specific data provider rules)
unsupportedResources	an object of class "list" giving eventual unsupported REST resources. Default is an empty list object

skipProviderId	an object of class "logical" indicating that the provider agencyId should be skipped. Used to control lack of strong SDMX REST compliance from data providers. For now, it applies only for the "data" resource.
forceProviderId	an object of class "logical" indicating if the provider agencyId has to be added at the end of the request. Default value is FALSE. For some providers, the all value for the provider agency id is not allowed, in this case, the agencyId of the data provider has to be forced in the web-request
headers	an object of class "list" that contains any additional headers for the request.

**Slots**

regUrl	an object of class "character" giving the base Url of the SDMX service registry
repoUrl	an object of class "character" giving the base Url of the SDMX service repository
accessKey	an object of class "character" indicating the name of request parameter for which an authentication or subscription user key/token has to be provided to perform requests
compliant	an object of class "logical" indicating if the request builder is somehow compliant with a service specification

**Warning**

This class is not useful in itself, but all SDMX non-abstract classes will encapsulate it as slot, when parsing an SDMX-ML document.

**Note**

Internal class

**Author(s)**

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

---

SDMXFooter

*Class "SDMXFooter"*

---

**Description**

A basic class to handle the footer of a SDMX-ML document

**Usage**

SDMXFooter(xmlObj, namespaces)

**Arguments**

xmlObj	object of class "XMLInternalDocument" derived from XML package
namespaces	object of class "data.frame" given the list of namespace URIs

**Value**

an object of class "SDMXFooter"

**Slots**

messages Object of class "SDMXFooterMessage" giving the list of messages

**Warning**

This class is not useful in itself, but all SDMX non-abstract classes will encapsulate it as slot, when parsing an SDMX-ML document.

**Note**

This class is especially useful for SDMX 2.1 compliant documents. Footer messages are not supported in SDMX 2.0 standard format. In this case, the footer will return an empty message list().

According to the SDMX 2.1 standard, the message severity takes one of the following values: "Error", "Warning", "Information". Given the possible typos handled by data providers, rsdmx adopts a permissive strategy and does not validate the object according to such controlled terms.

**Author(s)**

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

**See Also**

[readSDMX](#)

---

SDMXFooterMessage	Class "SDMXFooterMessage"
-------------------	---------------------------

---

**Description**

A basic class to handle a footer message of a SDMX-ML document

**Usage**

```
SDMXFooterMessage(xmlObj)
```

**Arguments**

xmlObj            object of class "XMLInternalDocument derived from XML package"

**Value**

an object of class "SDMXFooterMessage"

**Slots**

code Object of class "character" giving the status code  
severity Object of class "character" giving the severity of the message  
messages Object of class "list" giving the list of messages

**Warning**

This class is not useful in itself, but all SDMX non-abstract classes will encapsulate it as slot, when parsing an SDMX-ML document

**Note**

This class is especially useful for SDMX 2.1 compliant documents. Footer messages are not supported in SDMX 2.0 standard format.

According to the SDMX 2.1 standard, the message severity takes one of the following values: "Error", "Warning", "Information". Given the possible typos handled by data providers, rsdmx adopts a permissive strategy and does not validate the object according to such controlled terms.

**Author(s)**

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

**See Also**

[SDMXFooter readSDMX](#)

---

SDMXGenericData	<i>Class "SDMXGenericData"</i>
-----------------	--------------------------------

---

**Description**

A basic class to handle a SDMX-ML Generic data set

**Usage**

```
SDMXGenericData(xmlObj, namespaces)
```

**Arguments**

xmlObj object of class "XMLInternalDocument" derived from XML package  
namespaces object of class "data.frame" given the list of namespace URIs

**Value**

an object of class "SDMXGenericData"

**Warning**

This class is not useful in itself, but all SDMX non-abstract classes will encapsulate it as slot, when parsing an SDMX-ML document.

**Author(s)**

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

**See Also**

[readSDMX](#)

---

SDMXHeader

*Class "SDMXHeader"*


---

**Description**

A basic class to handle the header of a SDMX-ML document

**Usage**

```
SDMXHeader(xmlObj, namespaces)
```

**Arguments**

xmlObj	object of class "XMLInternalDocument derived from XML package"
namespaces	object of class "data.frame" given the list of namespace URIs

**Value**

an object of class "SDMXHeader"

**Slots**

ID	Object of class "character" giving the ID of the SDMX-ML document
Test	Object of class "logical" indicating if the SDMX-ML document is disseminated for test purpose
Truncated	Object of class "logical" indicating if the SDMX-ML document is truncated
Name	Object of class "character" giving the name of SDMX-ML document
Sender	Object of class "list" giving the id of the sender and eventually its in name, possibly in multi-languages
Receiver	Object of class "list" giving the id of the receiver and eventually its in name, possibly in multi-languages
Prepared	Object of class "POSIXlt" giving the preparation date of the SDMX-ML document
Extracted	Object of class "POSIXlt" giving the extraction date of the SDMX-ML document

**ReportingBegin** Object of class "POSIXlt" giving the reporting begin date for the data retrieved in the SDMX-ML document

**ReportingEnd** Object of class "POSIXlt" giving the reporting end date for the data retrieved in the SDMX-ML document

**Source** Object of class "character" giving the source of the SDMX-ML document

### Warning

This class is not useful in itself, but all SDMX non-abstract classes will encapsulate it as slot, when parsing an SDMX-ML document

### Note

Some SDMXHeader properties are not yet supported and thus not available as "slots". These are "KeyFamilyRef", "KeyFamilyAgency", "DataSetAgency", "DataSetID", "DataSetAction".

### Author(s)

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

### See Also

[readSDMX](#)

---

SDMXItemScheme

*Class "SDMXItemScheme"*

---

### Description

A basic abstract class to handle a SDMXItemScheme

### Warning

This class is not useful in itself, but all SDMX non-abstract "scheme" classes should implement it. Added for the sake of complying with the SDMX information structure model

### Author(s)

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



---

SDMXMessageGroup      *Class "SDMXMessageGroup"*

---

**Description**

A basic class to handle a SDMX-ML MessageGroup data set

**Usage**

SDMXMessageGroup(xmlObj, namespaces)

**Arguments**

xmlObj                  object of class "XMLInternalDocument derived from XML package"  
namespaces              object of class "data.frame" given the list of namespace URIs

**Value**

an object of class "SDMXMessageGroup"

**Warning**

This class is not useful in itself, but all SDMX non-abstract classes will encapsulate it as slot, when parsing an SDMX-ML document.

**Author(s)**

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

**See Also**

[readSDMX](#)

---

SDMXOrganisation      *Class "SDMXOrganisation"*

---

**Description**

A basic class to handle a SDMX Concept

**Usage**

SDMXOrganisation(xmlObj, namespaces)

**Arguments**

xmlObj            object of class "XMLInternalDocument derived from XML package"  
namespaces       object of class "data.frame" given the list of namespace URIs

**Value**

an object of class "SDMXOrganisation"

**Slots**

id    Object of class "character" giving the ID of the concept (required)  
uri   Object of class "character" giving the concept uri  
urn   Object of class "character" giving the concept urn  
Name   Object of class "list" giving the organisation name (by language) - required  
Description   Object of class "list" giving the organisation description (by language)

**Warning**

This class is not useful in itself, but other classes such as [SDMXAgency](#) will implement it.

**Author(s)**

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

**See Also**

[readSDMX](#)

---

SDMXOrganisationScheme

*Class "SDMXOrganisationScheme"*

---

**Description**

A basic abstract class to handle a SDMXOrganisationScheme

**Information**

This class is implemented in both SDMX 2.0 and 2.1. In the latter, it is extended by other specific classes such as AgencyScheme, DataConsumerScheme, DataProviderScheme and OrganisationUnitScheme. **rsdmx** covers the support in SDMX 2.1

**Author(s)**

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

---

SDMXOrganisationSchemes

*Class "SDMXOrganisationSchemes"*

---

### **Description**

A basic class to handle a SDMX OrganisationSchemes

### **Usage**

```
SDMXOrganisationSchemes(xmlObj, namespaces)
```

### **Arguments**

xmlObj	object of class "XMLInternalDocument derived from XML package"
namespaces	object of class "data.frame" given the list of namespace URIs

### **Value**

an object of class "OrganisationSchemes"

### **Slots**

organisationSchemes Object of class "list" giving the list of [SDMXAgencyScheme](#)

### **Warning**

This class is not useful in itself, but all SDMX non-abstract classes will encapsulate it as slot, when parsing an SDMX-ML document

### **Author(s)**

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

### **See Also**

[readSDMX](#)

---

SDMXPrimaryMeasure      *Class "SDMXPrimaryMeasure"*

---

**Description**

A basic class to handle a SDMX PrimaryMeasure

**Usage**

SDMXPrimaryMeasure(xmlObj, namespaces)

**Arguments**

xmlObj                    object of class "XMLInternalDocument derived from XML package"  
namespaces                object of class "data.frame" given the list of namespace URIs

**Value**

an object of class "SDMXPrimaryMeasure"

**Slots**

conceptRef    Object of class "character" giving the dimension conceptRef (required)  
conceptVersion    Object of class "character" giving the dimension concept version  
conceptAgency    Object of class "character" giving the dimension concept agency  
conceptSchemeRef    Object of class "character" giving the dimension conceptScheme ref  
conceptSchemeAgency    Object of class "character" giving the dimension conceptScheme agency  
codelist    Object of class "character" giving the codelist ref name  
codelistVersion    Object of class "character" giving the codelist ref version  
codelistAgency    Object of class "character" giving the codelist ref agency

**Warning**

This class is not useful in itself, but all SDMX non-abstract classes will encapsulate it as slot, when parsing an SDMX-ML document.

**Author(s)**

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

**See Also**

[readSDMX](#)

---

SDMXRequestBuilder      *Class "SDMXRequestBuilder"*

---

### Description

A basic class to handle a SDMX service request builder

### Usage

```
SDMXRequestBuilder(regUrl, repoUrl, accessKey = NULL,
  formatter, handler, compliant, unsupportedResources = list(),
  headers = list())
```

### Arguments

regUrl	an object of class "character" giving the base Url of the SDMX service registry
repoUrl	an object of class "character" giving the base Url of the SDMX service repository
accessKey	an object of class "character" indicating the name of request parameter for which an authentication or subscription user key/token has to be provided to perform requests
formatter	an object of class "list" giving a formatting function (for each resource) that takes an object of class "SDMXRequestParams" as single argument. Such parameter allows to customize eventual params (e.g. specific data provider rules)
handler	an object of class "list" that will be in charge of build a web request.
compliant	an object of class "logical" indicating if the request builder is somehow compliant with a service specification
unsupportedResources	an object of class "list" giving one or more resources not supported by the Request builder for a given provider
headers	an object of class "list" that contains any additional headers for the request.

### Details

The handler function will list the resource methods. Each method will accept a single object of class [SDMXRequestParams](#) as argument. This object will give the different request params as slots (baseUrl, agencyId, resource, resourceId, version, flowRef, key, start, end, compliant) to build the output (a string representing the web request to build).

The rsdmx package will as much as possible try to handler generic handlers. At now, the available embedded builders are: [SDMXREST20RequestBuilder](#) (connector for SDMX 2.0 web-services), [SDMXREST21RequestBuilder](#) (connector for SDMX 2.1 web-services), [SDMXDotStatRequestBuilder](#) (connector for SDMX .Stat web-services implementations)

**Slots**

regUrl an object of class "character" giving the base Url of the SDMX service registry

repoUrl an object of class "character" giving the base Url of the SDMX service repository

accessKey an object of class "character" indicating the name of request parameter for which an authentication or subscription user key/token has to be provided to perform requests

formatter an object of class "list" giving a formatting function (for each resource) that takes an object of class "SDMXRequestParams" as single argument. Such parameter allows to customize eventual params (e.g. specific data provider rules)

handler an object of class "list" that will be in charge of build a web request.

compliant an object of class "logical" indicating if the request builder is somehow compliant with a service specification

unsupportedResources an object of class "character" giving one or more resources not supported by the Request builder for a given provider

headers an object of class "list" that contains any additional headers for the request.

**Warning**

This class is not useful in itself, but all SDMX non-abstract classes will encapsulate it as slot, when parsing an SDMX-ML document (Concepts, or DataStructureDefinition)

**Author(s)**

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

**Examples**

```
#default formatter
myFormatter = list(
  dataflow = function(obj){
    #format some obj slots here
    return(obj)
  },
  datastructure = function(obj){
    #format some obj slots here
    return(obj)
  },
  data = function(obj){
    #format some obj slots here
    return(obj)
  }
)

#an handler
#where each element of the list is a function taking as argument an object
#of class "SDMXRequestParams"
myHandler <- list(
  "dataflow" = function(obj){return(obj@regUrl)},
  "datastructure" = function(obj){return(obj@regUrl)},
```

```

    "data" = function(obj){return(obj@repoUrl)}
  )

#how to create a SDMXRequestBuilder
requestBuilder <- SDMXRequestBuilder(
  regUrl = "http://www.myorg.org/registry",
  repoUrl = "http://www.myorg.org/repository",
  accessKey = NULL,
  formatter = myFormatter, handler = myHandler, compliant = FALSE)

```

---

SDMXRequestParams      *Class "SDMXRequestParams"*

---

### Description

A class to handle a SDMX service request params

### Usage

```
SDMXRequestParams(regUrl, repoUrl, accessKey,
                  providerId, agencyId, resource, resourceId, version,
                  flowRef, key, start, end, references = NULL, compliant)
```

### Arguments

regUrl	an object of class "character" giving the base Url of the SDMX service registry
repoUrl	an object of class "character" giving the base Url of the SDMX service repository
accessKey	an object of class "character" giving the eventual authentication or subscription user key (or token) to provide in order to perform the SDMX request. This key may be mandatory for some service providers.
providerId	an object of class "character" giving the provider agency id
agencyId	an object of class "character" giving an agency id
resource	an object of class "character" giving the type of resource to be queried
resourceId	an object of class "character" giving the resource to be queried
version	an object of class "character" giving the resource version
flowRef	an object of class "character" giving the flowRef to be queried
key	an object of class "character" giving the key (SDMX url formatted) to be used for the query
start	an object of class "character" giving the start time
end	an object of class "character" giving the end time
references	an object of class "character" giving the instructions to return (or not) the artefacts referenced by the artefact to be returned
compliant	an object of class "logical" indicating if the web-service is compliant with the SDMX REST web-service specifications

**Slots**

regUrl an object of class "character" giving the base Url of the SDMX service registry

repoUrl an object of class "character" giving the base Url of the SDMX service repository

accessKey an object of class "character" indicating the name of request parameter for which an authentication or subscription user key/token has to be provided to perform requests

providerId an object of class "character" giving the provider agency Id

agencyId an object of class "character" giving an agency Id

resource an object of class "character" giving the type of resource to be queried

resourceId an object of class "character" giving the resource to be queried

version an object of class "character" giving the resource version

flowRef an object of class "character" giving the flowRef to be queried

key an object of class "character" giving the key (SDMX url formatted) to be used for the query

start an object of class "character" giving the start time

end an object of class "character" giving the end time

references an object of class "character" giving the instructions to return (or not) the artefacts referenced by the artefact to be returned

compliant an object of class "logical" indicating if the web-service is compliant with the SDMX REST web-service specifications

**Warning**

This class is not useful in itself, but all SDMX non-abstract classes will encapsulate it as slot, when parsing an SDMX-ML document.

**Author(s)**

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

**Examples**

```
#how to create a SDMXRequestParams object
params <- SDMXRequestParams(
  regUrl = "", repoUrl = "", accessKey = NULL,
  providerId = "", agencyId = "", resource = "data", resourceId = "",
  version = "", flowRef = "", key = NULL, start = NULL, end = NULL,
  references = NULL, compliant = FALSE
)
```



---

SDMXREST20RequestBuilder

*Class "SDMXREST20RequestBuilder"*


---

### Description

A experimental class to handle a SDMX 2.0 service request builder

### Usage

```
SDMXREST20RequestBuilder(regUrl, repoUrl, accessKey = NULL, formatter, compliant,
    unsupportedResources = list(), skipProviderId = FALSE, forceProviderId = FALSE,
    headers = list())
```

### Arguments

regUrl	an object of class "character" giving the base Url of the SDMX service registry
repoUrl	an object of class "character" giving the base Url of the SDMX service repository
accessKey	an object of class "character" indicating the name of request parameter for which an authentication or subscription user key/token has to be provided to perform requests
formatter	an object of class "list" giving a formatting function (for each resource) that takes an object of class "SDMXRequestParams" as single argument. Such parameter allows to customize eventual params (e.g. specific data provider rules)
compliant	an object of class "logical" indicating if the web-service is compliant with the SDMX REST web-service specifications
unsupportedResources	an object of class "list" giving eventual unsupported REST resources. Default is an empty list object
skipProviderId	an object of class "logical" indicating that the provider agencyId should be skipped. Used to control lack of strong SDMX REST compliance from data providers. For now, it applies only for the "data" resource.
forceProviderId	an object of class "logical" indicating if the provider agencyId has to be added at the end of the request. Default value is FALSE. For some providers, the all value for the provider agency id is not allowed, in this case, the agencyId of the data provider has to be forced in the web-request
headers	an object of class "list" that contains any additional headers for the request.

### Slots

regUrl an object of class "character" giving the base Url of the SDMX service registry

repoUrl an object of class "character" giving the base Url of the SDMX service repository

`accessKey` an object of class "character" indicating the name of request parameter for which an authentication or subscription user key/token has to be provided to perform requests

`compliant` an object of class "logical" indicating if the web-service is compliant with the SDMX REST web-service specifications

### Warning

This class is not useful in itself, but all SDMX non-abstract classes will encapsulate it as slot, when parsing an SDMX-ML document.

### Author(s)

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

### Examples

```
#how to create a SDMXREST20RequestBuilder
requestBuilder <- SDMXREST20RequestBuilder(
  regUrl = "http://www.myorg/registry",
  repoUrl = "http://www.myorg/repository", compliant = FALSE)
```

---

SDMXREST21RequestBuilder

*Class "SDMXREST21RequestBuilder"*

---

### Description

A experimental class to handle a SDMX 2.1 service request builder

### Usage

```
SDMXREST21RequestBuilder(regUrl, repoUrl, accessKey = NULL, formatter = NULL, compliant,
  unsupportedResources = list(), skipProviderId = FALSE, forceProviderId = FALSE,
  skipTrailingSlash = FALSE, headers = list())
```

### Arguments

<code>regUrl</code>	an object of class "character" giving the base Url of the SDMX service registry
<code>repoUrl</code>	an object of class "character" giving the base Url of the SDMX service repository
<code>accessKey</code>	an object of class "character" indicating the name of request parameter for which an authentication or subscription user key/token has to be provided to perform requests
<code>formatter</code>	an object of class "list" giving a formatting function (for each resource) that takes an object of class "SDMXRequestParams" as single argument. Such parameter allows to customize eventual params (e.g. specific data provider rules)

compliant	an object of class "logical" indicating if the web-service is compliant with the SDMX REST web-service specifications
unsupportedResources	an object of class "list" giving eventual unsupported REST resources. Default is an empty list object
skipProviderId	an object of class "logical" indicating that the provider agencyId should be skipped. Used to control lack of strong SDMX REST compliance from data providers. For now, it applies only for the "data" resource.
forceProviderId	an object of class "logical" indicating if the provider agencyId has to be added at the end of the request. Default value is FALSE. For some providers, the all value for the provider agency id is not allowed, in this case, the agencyId of the data provider has to be forced in the web-request.
skipTrailingSlash	Avoid to use a trailing slash at the end of the requests. Default is FALSE.
headers	an object of class "list" that contains any additional headers for the request.

**Slots**

regUrl	an object of class "character" giving the base Url of the SDMX service registry
repoUrl	an object of class "character" giving the base Url of the SDMX service repository
accessKey	an object of class "character" indicating the name of request parameter for which an authentication or subscription user key/token has to be provided to perform requests
compliant	an object of class "logical" indicating if the web-service is compliant with the SDMX REST web-service specifications

**Warning**

This class is not useful in itself, but all SDMX non-abstract classes will encapsulate it as slot, when parsing an SDMX-ML document.

**Author(s)**

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

**Examples**

```
#how to create a SDMXREST21RequestBuilder
requestBuilder <- SDMXREST21RequestBuilder(
  regUrl = "http://www.myorg/registry",
  repoUrl = "http://www.myorg/repository",
  compliant = TRUE)
```

---

SDMXSchema	<i>Class "SDMXSchema"</i>
------------	---------------------------

---

**Description**

A basic class to handle the version of the SDMX-ML Schema

**Usage**

```
SDMXSchema(xmlObj, namespaces)
```

**Arguments**

xmlObj	object of class "XMLInternalDocument derived from XML package"
namespaces	object of class "data.frame" given the list of namespace URIs

**Value**

an object of class "SDMXSchema"

**Slots**

version Object of class "character" giving the SDMX-ML schema version

**Warning**

this class is not useful in itself, but all SDMX non-abstract classes will encapsulate it as slot, when parsing an SDMX-ML document.

**Author(s)**

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

**See Also**

[readSDMX](#)

---

SDMXServiceProvider    *Class "SDMXServiceProvider"*

---

**Description**

A basic class to handle a SDMX service provider

**Usage**

```
SDMXServiceProvider(agencyId, name, scale, country, builder)
```

**Arguments**

agencyId	an object of class "character" giving the a provider identifier
name	an object of class "character" giving the name of the provider
scale	an object of class "character" giving the scale of the datasource, either "international" or "national". Default value is "international".
country	an object of class "character" giving the ISO 3-alpha code of the country (if scale is "national"). Default value is NA
builder	an object of class "SDMXRequestBuilder" that will performs the web request building for this specific provider

**Value**

an object of class "SDMXServiceProvider"

**Slots**

agencyId	an object of class "character" giving the a provider identifier
name	an object of class "character" giving the name of the provider
scale	an object of class "character" giving the scale of the datasource, either "international" or "national"
country	an object of class "character" giving the ISO 3-alpha code of the country (if scale is "national")
builder	an object of class "SDMXRequestBuilder" that will performs the web request building

**Author(s)**

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

### Examples

```
#let's create a SDMXRESTRequestBuilder
#(assuming that "My Organization" implements SDMX REST web-services)
myBuilder <- SDMXREST20RequestBuilder(regUrl = "http://www.myorg.org/registry",
                                     repoUrl = "http://www.myorg.org/repository",
                                     compliant = TRUE)

#create a SDMXServiceProvider
provider <- SDMXServiceProvider(agencyId = "MYORG", name = "My Organization",
                                builder = myBuilder)
```

---

SDMXServiceProviders    *Class "SDMXServiceProviders"*

---

### Description

A class to wrap a list of SDMX service providers

### Usage

```
SDMXServiceProviders(providers)
```

### Arguments

providers            an object of class "list" (of [SDMXServiceProvider](#)) configured by default and/or at runtime in **rdsdmx**

### Value

an object of class "SDMXServiceProviders"

### Slots

providers an object of class "list" (of [SDMXServiceProvider](#)) configured by default and/or at runtime in **rdsdmx**

### Warning

this class is not useful in itself, but all SDMX non-abstract classes will encapsulate it as slot, when parsing an SDMX-ML document.

### Author(s)

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

---

SDMXStructureSpecificData

*Class "SDMXStructureSpecificData"*

---

**Description**

A basic class to handle a SDMX-ML StructureSpecificData data set

**Usage**

```
SDMXStructureSpecificData(xmlObj, namespaces)
```

**Arguments**

xmlObj	object of class "XMLInternalDocument derived from XML package"
namespaces	object of class "data.frame" given the list of namespace URIs

**Value**

an object of class "SDMXStructureSpecificData"

**Warning**

This class is not useful in itself, but all SDMX non-abstract classes will encapsulate it as slot, when parsing an SDMX-ML document.

**Author(s)**

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

**See Also**

[readSDMX](#)

---

SDMXStructureSpecificTimeSeriesData

*Class "SDMXStructureSpecificTimeSeriesData"*

---

**Description**

A basic class to handle a SDMX-ML StructureSpecificTimeSeriesData data set

**Usage**

```
SDMXStructureSpecificTimeSeriesData(xmlObj, namespaces)
```

**Arguments**

xmlObj	object of class "XMLInternalDocument derived from XML package"
namespaces	object of class "data.frame" given the list of namespace URIs

**Value**

an object of class "SDMXStructureSpecificTimeSeriesData"

**Warning**

This class is not useful in itself, but all SDMX non-abstract classes will encapsulate it as slot, when parsing an SDMX-ML document.

**Author(s)**

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

**See Also**

[readSDMX](#)

---

SDMXStructureType      *Class "SDMXStructureType"*

---

**Description**

A basic class to handle the type of a SDMX-ML Structure document

**Usage**

```
SDMXStructureType(xmlObj, namespaces, resource)
```

**Arguments**

xmlObj	object of class "XMLInternalDocument derived from XML package"
namespaces	object of class "data.frame" given the list of namespace URIs
resource	object of class "character" giving the REST resource to be queried (required to distinguish between dataflows and datastructures in SDMX 2.0)

**Value**

an object of class "SDMXStructureType"

**Warning**

This class is not useful in itself, but it will be used by [readSDMX](#) to deal with SDMX-ML Structure documents.



**Author(s)**

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

**See Also**

[readSDMX](#)

---

SDMXTimeDimension      *Class "SDMXTimeDimension"*

---

**Description**

A basic class to handle a SDMX TimeDimension

**Usage**

```
SDMXTimeDimension(xmlObj, namespaces)
```

**Arguments**

xmlObj	object of class "XMLInternalDocument derived from XML package"
namespaces	object of class "data.frame" given the list of namespace URIs

**Value**

an object of class "SDMXTimeDimension"

**Slots**

conceptRef Object of class "character" giving the dimension conceptRef (required)  
conceptVersion Object of class "character" giving the dimension concept version  
conceptAgency Object of class "character" giving the dimension concept agency  
conceptSchemeRef Object of class "character" giving the dimension conceptScheme ref  
conceptSchemeAgency Object of class "character" giving the dimension conceptScheme agency  
odelist Object of class "character" giving the codelist ref name  
odelistVersion Object of class "character" giving the codelist ref version  
odelistAgency Object of class "character" giving the codelist ref agency  
crossSectionalAttachDataset Object of class "logical"  
crossSectionalAttachGroup Object of class "logical"  
crossSectionalAttachSection Object of class "logical"  
crossSectionalAttachObservation Object of class "logical"

**Warning**

This class is not useful in itself, but non-abstract classes will encapsulate it as slot, when parsing an SDMX-ML document (Concepts, or DataStructureDefinition)

**Author(s)**

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

**See Also**

[readSDMX](#)

---

SDMXType

*Class "SDMXType"*

---

**Description**

A basic class to handle the type of a SDMX-ML document

**Usage**

```
SDMXType(xmlObj)
```

**Arguments**

xmlObj            object of class "XMLInternalDocument derived from XML package"

**Value**

an object of class "SDMXType"

**Slots**

type    Object of class "character" giving the type of the SDMX-ML document

**Warning**

this class is not useful in itself, but all SDMX non-abstract classes will encapsulate it as slot, when parsing an SDMX-ML document.

**Note**

At now, the following types have been implemented and successfully tested: - StructureType, - GenericDataType, - CompactDataType, - StructureSpecificDataType, - CrossSectionalDataType, - UtilityDataType, - MessageGroupType

**Author(s)**

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

**See Also**[readSDMX](#)

---

SDMXUtilityData	<i>Class "SDMXUtilityData"</i>
-----------------	--------------------------------

---

**Description**

A basic class to handle a SDMX-ML UtilityData data set

**Usage**

```
SDMXUtilityData(xmlObj, namespaces)
```

**Arguments**

xmlObj	object of class "XMLInternalDocument derived from XML package"
namespaces	object of class "data.frame" given the list of namespace URIs

**Value**

an object of class "SDMXUtilityData"

**Warning**

This class is not useful in itself, but all SDMX non-abstract classes will encapsulate it as slot, when parsing an SDMX-ML document.

**Author(s)**

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

**See Also**[readSDMX](#)

setDSD

*setDSD*

---

**Description**

set the dsd slot of a SDMXData object

**Usage**

```
setDSD(obj, dsd)
```

**Arguments**

obj	An object deriving from class "SDMXData"
dsd	An object of class "SDMXDataStructureDefinition"

**Value**

the 'obj' object of class "SDMXData" enriched with the dsd

**Author(s)**

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

**See Also**

[SDMXData-class](#)

---

setSDMXServiceProviders

*setSDMXServiceProviders*

---

**Description**

function used internally by **r sdmx**, when loading the package, to set the list of [SDMXService-Provider](#) known by **r sdmx** (hence known by [readSDMX](#) to query data/metadata in an easier way). For internal use only (this function does not provide any value for the end user, but it is here documented for transparency, and to explain how the package works.)

**Usage**

```
setSDMXServiceProviders()
```

**Author(s)**

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

**See Also**

[getSDMXServiceProviders](#) [addSDMXServiceProvider](#) [findSDMXServiceProvider](#) [readSDMX](#)

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