

# Package ‘rsdmx’

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

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**Depends** R (>= 2.15)

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

**Suggests** testthat, knitr, roxygen2

**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>, <http://www.sdmx.org>

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

**LazyLoad** yes

**Encoding** UTF-8

**Collate** 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  
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 Class-SDMXREST20RequestBuilder.R  
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 readSDMX.R saveSDMX.R profile.R rsdmx.R

**RoxygenNote** 6.0.1

**NeedsCompilation** no

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addSDMXServiceProvider

*addSDMXServiceProvider*

---

### Description

function that allows configuring a new [SDMXServiceProvider](#) as part of the list of providers known by `rdsdmx`, 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	<i>findSDMXServiceProvider</i>
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---

**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.

**Methods (by class)**

- SDMX:

**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-methods`  
*getStructureType*

---

**Description**

Access the subtype of `SDMXStructureType` object

**Usage**

`getStructureType(obj)`

**Arguments**

`obj` An object deriving from class "`SDMXStructureType`"

**Value**

an object of class "character"

**Methods**

`obj` An object deriving from class "`SDMXStructureType`"

**Author(s)**

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

**See Also**

[SDMXStructureType-class](#)

---

isRegistryInterfaceEnvelope  
*isRegistryInterfaceEnvelope*

---

**Description**

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

**Usage**

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

**Arguments**

xmlObj	object of class "XMLInternalDocument derived from XML package"
nativeRoot	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](#)

---

namespaces.SDMX

*namespaces.SDMX*

---

**Description**

function used to get the namespaces handled by an SDMX-ML object

**Usage**

```
namespaces.SDMX(xmlObj)
```

**Arguments**

xmlObj            an object of class "XMLInternalDocument"

**Value**

an object of class "data.frame" giving the namespace(s) id and uri

**Warning**

namespaces.SDMX is a function used internally to get the namespaces of the SDMX-ML object through [getNamespaces](#). This last function is used an utility re-used in the different SDMX document parsers.

**Author(s)**

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

**See Also**

[SDMXType-class getNamespaces](#)

---

readSDMX

*readSDMX*

---

**Description**

readSDMX is the main function to use to read SDMX data

**Usage**

```
readSDMX(file, isURL, isRData,
          provider, providerId, providerKey,
          agencyId, resource, resourceId, version,
          flowRef, key, key.mode, start, end, dsd, validate, verbose)
```

**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 key.mode 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
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.
verbose	an Object of class "logical" that indicates if rsdmx messages should appear to user. Default is TRUE.

**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 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**)

# SDMX DataStructureDefinition (DSD)
#-----

# 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**)

```

**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

**Details**

Package: rsdmx  
Type: Package  
Version : 0.5-13  
Date: 2018-09-21  
License: GPL(>=2.0)  
LazyLoad: yes

**Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

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**

```
# 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)
saveSDMX(sdmx, "sdmx.rda")
```

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 [r sdmx](#) 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(s)**

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

**See Also**

[readSDMX](#)

---

SDMXAgency

*Class "SDMXAgency"*

---

**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      *Class "SDMXAgencyScheme"*

---

**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

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

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 Attribute. 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 is 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

*Class "SDMXCodelists"*

---

**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**

<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 "SDMXCompactData"

**Author(s)**

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

**See Also**

[readSDMX](#)

---

SDMXComponents	<i>Class "SDMXComponents"</i>
----------------	-------------------------------

---

**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	<i>Class "SDMXConcept"</i>
-------------	----------------------------

---

**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.blondel1@gmail.com>

### See Also

[readSDMX](#)

---

SDMXConceptScheme      *Class "SDMXConceptScheme"*

---

**Description**

A basic class to handle a SDMX Concept scheme

**Usage**

SDMXConceptScheme(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 "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**

<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 "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(s)**

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**

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 "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  
 codelist Object of class "character" giving the codelist ref name  
 codelistVersion Object of class "character" giving the codelist ref version



**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
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

**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.

**Author(s)**

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

**Examples**

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

---

SDMXFooter	<i>Class "SDMXFooter"</i>
------------	---------------------------

---

**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	<i>Class "SDMXHeader"</i>
------------	---------------------------

---

**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	<i>Class "SDMXItemScheme"</i>
----------------	-------------------------------

---

**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	<i>Class "SDMXMessageGroup"</i>
------------------	---------------------------------

---

**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  
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

**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,
                   formatter, handler, compliant, unsupportedResources)
```

**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

## 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

## 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, 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
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
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, compliant = FALSE
)
```



---

SDMXREST20RequestBuilder

*Class "SDMXREST20RequestBuilder"*


---

### Description

A experimental class to handle a SDMX 2.0 service request builder

### Usage

```
SDMXREST20RequestBuilder(regUrl, repoUrl, accessKey, compliant, unsupportedResources,
    skipProviderId, forceProviderId)
```

### 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
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

### 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, compliant, unsupportedResources,
  skipProviderId, forceProviderId)
```

**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
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

### 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

*Class "SDMXSchema"*

---

### 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>

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 **r sdmx**

**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  
 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  
 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 willencapsulate 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

*Class "SDMXUtilityData"*

---

**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)
```

```
## S4 method for signature 'SDMXData'  
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

**Methods (by class)**

- SDMXData:

**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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