BANQUE CENTRALE DU LUXEMBOURG
EUROSYSTÈME

Technical specifications

AnaCredit – Version 1.0.4

Banque centrale du Luxembourg

Contents

1 Scope

This document describes the technical format for the collection of the AnaCredit reporting at BCL.

This document is based on the "Data Exchange Format" document provided by the ECB (European Central Bank) to the NCBs (National Central Banks) for the secondary reporting (i.e. the reporting between the NCBs and the ECB).

The technical format is based on the SMCube methodology and on the format used by the ECB based on SDMX-ML (part of the SDMX 2.1 technical standard).

2 Acronyms

DICO	BCL's extension of the ECB's Single Data Dictionary (SDD)
NEVS	Null Explanatory Values
RIAD	Register of Institutions and Affiliates Database (ECB register)
SDD	ECB's Single Data Dictionary
SDMX	Statistical Data and Metadata eXchange (https://sdmx.org/)
SMCube	Single Multidimensional Metadata Model (https://www.ecb.europa.eu/stats/ecb_statistics/co-operation_and_standards/smcube/html/index.en.html)

3 Introduction

The AnaCredit data will be collected in four different surveys having all their own expected reporting population and deadlines:

- For counterparty reference data
  - Template 1 – Counterparty Reference Data – monthly (BCL_ANCRDT_T1_REF)
- For credit data
  - Template 1 – monthly (BCL_ANCRDT_T1M)
  - Template 2 – monthly (BCL_ANCRDT_T2M)

- Template 2 – quarterly (BCL_ANCRDT_T2Q)

Each survey will include the relevant data cubes as defined in the BCL's extension of the SDD (DICO).

Each message :

- refers to only one Survey/Reporting agent/Reference date (for counterparty reference data) or one Survey/Observed agent/Reference date (for credit data).
- has a FULL_REPLACEMENT submission type[1]. This type has to be used to replace completely all the data for a given Survey/Reporting agent/Reference date (for counterparty reference data) or Survey/Observed agent/Reference date (for credit data). In such a case the acquisition message will include the full snapshot of all static and dynamic tables[2].

The table below describes the list of cubes by survey.

[1] The use of submission types is detailed in the reporting instructions.

[2] "Full snapshot" refers to including all records for an observed agent and reference date for the corresponding tables included in the message.

Table 1: Cubes by survey

Survey	Tables	Cube
BCL_ANCRDT_T1_REF	1	Counterparty reference (static) – BCL_ANCRDT_ENTTY_C
BCL_ANCRDT_T1M	2	Instrument (static) – BCL_ANCRDT_INSTRMNT_C
	3	Financial – BCL_ANCRDT_FNNCL_C
	4	Counterparty_Instrument (static) – BCL_ANCRDT_ENTTY_INSTRMNT_C
	5	Joint Liabilities – BCL_ANCRDT_JNT_LBLTS_C
BCL_ANCRDT_T2M	7	Protection received (static) – BCL_ANCRDT_PRTCTN_RCVD_C
	8	Instrument-protection – BCL_ANCRDT_INSTRMNT_PRTCTN_RCVD_C
	9	Counterparty Risk data – BCL_ANCRDT_ENTTY_RSK_C
	10	Counterparty default data – BCL_ANCRDT_ENTTY_DFLT_C
BCL_ANCRDT_T2Q	6	Accounting – BCL_ANCRDT_ACCNTNG_C

4 Message file

4.1 File naming convention

4.1.1 For counterparty reference data survey

[Prefix]_[Period]_[ReportingAgentCode]_[messageID].[ext]

with:

- [Prefix] : ANTREF (for BCL_ANCRDT_T1_REF)
- [Period] : period (format : YYYYMM)
- [ReportingAgentCode] : RIAD code of the Reporting Agent (published by BCL)
- [MessageID] : internal reference number for the message (cf. ID element of the SDMX Header)
- [ext] : xml or zip

When a zip file is used, it must contain only one file with the same naming convention : [Prefix]_[Period]_[ReportingAgentCode]_[messageID].zip must contain only one file named [Prefix]_[Period]_[ReportingAgentCode]_[messageID].xml.

Examples:

- ANTREF_201801_LUB00999_20180205-001.xml
- ANTREF_201802_LUB00999_20180305-001.zip (containing only one file named ANTREF_201802_LUB00999_20180305-001.xml)

4.1.2 For credit data surveys

[Prefix]_[Period]_[ReportingAgentCode]_[ObservedAgentCode]_[messageID].[ext]
where:

- [Prefix] : ANTT1M (for BCL_ANCRDT_T1M), ANTT2M (for BCL_ANCRDT_T2M), ANTT2Q (for BCL_ANCRDT_T2Q)
- [Period] : period (format : YYYYMM)
- [ReportingAgentCode] : RIAD code of the Reporting Agent (published by BCL)
- [ObservedAgentCode] : RIAD code of the Observed Agent (published by BCL)
- [MessageID] : internal reference number for the message (cf. ID element of the SDMX Header)
- [ext] : xml or zip

When a zip file is used, it must contain only one file with the same naming convention : [Prefix]_[Period]_[ReportingAgentCode]_[ObservedAgentCode]_[messageID].zip must contain only one file named [Prefix]_[Period]_[ReportingAgentCode]_[ObservedAgentCode]_[messageID].xml.

Examples:

- ANTT1M_201801_LUB00999_LUB00999_20180205-001.xml
- ANTT2Q_201803_LUB00999_LUB00999_20180405-001.zip (containing only one file named ANTT2Q_201803_LUB00999_LUB00999_20180405-001.zip)

4.2 XML schemas

Remark:

- All the XML schema files listed below must be located in the same directory.

4.2.1 Principal XML schemas

- BCL_ANCRDT_T1_REF_v1_0_4.xsd : schema for the BCL_ANCRDT_T1_REF survey.
- BCL_ANCRDT_T1M_v1_0_4.xsd : schema for the BCL_ANCRDT_T1M survey.
- BCL_ANCRDT_T2M_v1_0_4.xsd : schema for the BCL_ANCRDT_T2M survey.
- BCL_ANCRDT_T2Q_v1_0_4.xsd : schema for the BCL_ANCRDT_T2Q survey.

4.2.2 XML schemas for the constraints

- BCL_LU_ANCRDT_C_CONSTRAINTS_v1_0_4.xsd : schema containing the constraints on the code lists (i.e. subdomain enumerations) from the BCL's extension of the ECB Single Data Dictionary (DICO) for collection purpose.
- ECB_LU_ANCRDT_C_CONSTRAINTS_v1_0_4.xsd : schema containing the constraints on the code lists (i.e. subdomain enumerations) from the ECB Single Data Dictionary (SDD) for collection purpose.

4.2.3 XML schemas for the data types

- BCL_LU_ANCRDT_C_FORMATS_v1_0_4.xsd : schema containing the formats (i.e. facet collections and enumerations) from the BCL's extension of the ECB Single Data Dictionary (DICO) for collection purpose.
- ECB_LU_ANCRDT_C_FORMATS_v1_0_4.xsd: schema containing the formats (i.e. facet collections and enumerations) from the ECB Single Data Dictionary (SDD) for collection purpose

4.2.4 SDMX-ML 2.1 schemas

The XML schema files for SDMX-ML 2.1 can be downloaded from sdmx.org (http://sdmx.org/wp-content/uploads/SDMX_2-1-1_SECTION_3B_SDMX_ML_Schemas_Samples_201308.zip).

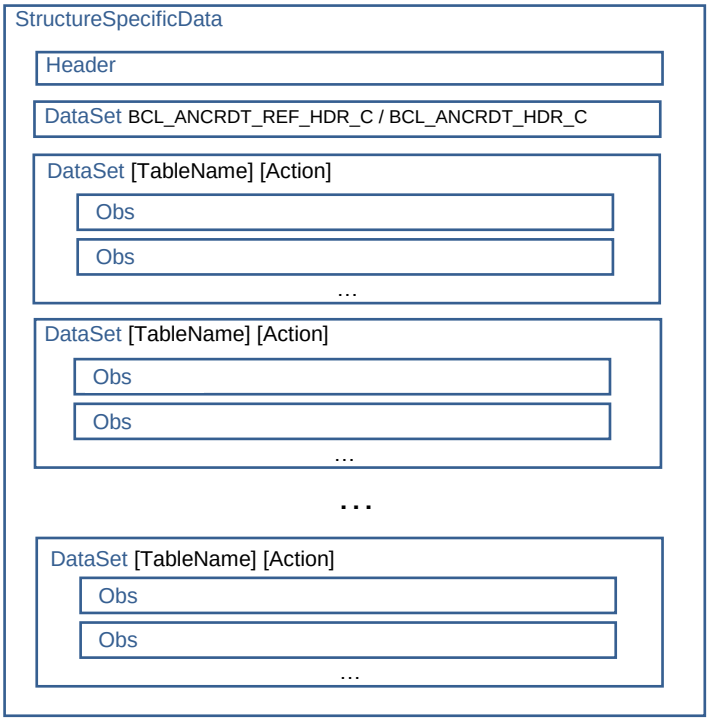
Below is the list of the corresponding XML schema files:

SDMXCommon.xsd	SDMXQueryProvisionAgreement.xsd
SDMXCommonReferences.xsd	SDMXQueryReportingTaxonomy.xsd
SDMXDataGeneric.xsd	SDMXQuerySchema.xsd
SDMXDataGenericBase.xsd	SDMXQueryStructureSet.xsd
SDMXDataGenericTimeSeries.xsd	SDMXQueryStructures.xsd
SDMXDataStructureSpecific.xsd	SDMXRegistry.xsd
SDMXDataStructureSpecificBase.xsd	SDMXRegistryBase.xsd
SDMXDataStructureSpecificTimeSeries.xsd	SDMXRegistryRegistration.xsd
SDMXMessage.xsd	SDMXRegistryStructure.xsd
SDMXMessageFooter.xsd	SDMXRegistrySubscription.xsd
SDMXMetadataGeneric.xsd	SDMXStructure.xsd
SDMXMetadataStructureSpecific.xsd	SDMXStructureBase.xsd
SDMXQuery.xsd	SDMXStructureCategorisation.xsd
SDMXQueryBase.xsd	SDMXStructureCategory.xsd
SDMXQueryCategorisation.xsd	SDMXStructureCodelist.xsd
SDMXQueryCategory.xsd	SDMXStructureConcept.xsd
SDMXQueryCodelist.xsd	SDMXStructureConstraint.xsd
SDMXQueryConcept.xsd	SDMXStructureDataStructure.xsd
SDMXQueryConstraint.xsd	SDMXStructureDataflow.xsd
SDMXQueryData.xsd	SDMXStructureHierarchicalCodelist.xsd
SDMXQueryDataStructure.xsd	SDMXStructureMetadataStructure.xsd
SDMXQueryDataflow.xsd	SDMXStructureMetadataflow.xsd
SDMXQueryHierarchicalCodelist.xsd	SDMXStructureOrganisation.xsd
SDMXQueryMetadata.xsd	SDMXStructureProcess.xsd
SDMXQueryMetadataStructure.xsd	SDMXStructureProvisionAgreement.xsd
SDMXQueryMetadataflow.xsd	SDMXStructureReportingTaxonomy.xsd
SDMXQueryOrganisation.xsd	SDMXStructureStructureSet.xsd
SDMXQueryProcess.xsd	xml.xsd

5 Technical format - overview

The Figure 1 depicts the structure of an AnaCredit acquisition message.

Figure 1 : Structure of an acquisition message



The root tag of the overall acquisition message is <StructureSpecificData>.

Inside the root, the following sections have to be provided:

- One and only one SDMX-ML standard Header which specifies in particular the sender contact information, plus additional usual information necessary to the SDMX technical standard. The Header must be the first section inside the root.
- One and only one technical header DataSet (BCL_ANCRDT_REF_HDR_C / BCL_ANCRDT_HDR_C) which includes all the AnaCredit specific attributes necessary to fully qualify the content. Examples of such attributes are: the submission type, the survey, the Observed agent, etc.

The technical header DataSet must be the second section inside the root and must include one and only one observation.

- One or more DataSet. Each DataSet refers to a specific AnaCredit Table ([TableName] in figure 1) and a specific action (Replace) ([Action] in figure 1) to be applied to its content.

In turn, each DataSet includes one or more observations, corresponding to the single data records which need to be transmitted.

In practical terms, the different data records in the acquisition message have to be grouped by AnaCredit table. Each of these groups will populate the specific DataSet section corresponding to the AnaCredit table.

5.1 SDMX Header

The header includes general information about the acquisition message. The following table describes which parts of the standard SDMX header fields are mandatory for AnaCredit purposes.

Table 2: SDMX Header

SDMX Header element name	Intended usage
ID	The submitting Reporting Agent could use this field to store a Reporting Agent internal reference number for the message. The Reporting Agent must ensure that the ID is unique and not reused across different messages submitted by the same Reporting Agent. A message is rejected if its ID is equal to one already transmitted by the same Reporting Agent.[3] According to the SDMX specification this field is a string. Within AnaCredit the string length is limited to 255 characters.
Test	Mandatory for SDMX standard. It is ignored by AnaCredit
Prepared	Unique timestamp describing the preparation time of the message.
Sender/@id	The RIAD code of the submitting Reporting Agent (published by BCL for the Reporting Agent in Luxembourg).
Receiver	Optional for SDMX standard. Its expected value is LU2. In any case it is ignored by AnaCredit.
Structure	To be populated with the necessary SDMX dataset structures. Each dataset used in the message must be listed only once.
DataProvider; DataSetaction; DataSetID; Extracted; ReportingBegin; ReportingEnd; EmbargoDate; Source	Ignored by AnaCredit

[3] The ID must be unique given Survey/Reporting agent/Reference date (for counterparty reference data) or Survey/Observed agent/Reference date (for credit data).

Example:

```
<message:Header>
        <message:ID>20180205-001</message:ID>
        <message:Test>false</message:Test>
        <message:Prepared>2018-02-05T07:22:35</message:Prepared>
        <message:Sender id="LUB00999"/>
        <message:Receiver id="LU2"/>
        <message:Structure structureID="BCL_ANCRDT_REF_HDR_C"
namespace="BCL_ANCRDT_REF_HDR_C" dimensionAtObservation="AllDimensions">
                <common:Structure>
                        <Ref agencyID="BCL" id="BCL_ANCRDT_REF_HDR_C"/>
                <common:Structure>
        </message:Structure>
        <message:Structure structureID="BCL_ANCRDT_ENTTY_C"
namespace="BCL_ANCRDT_ENTTY_C" dimensionAtObservation="AllDimensions">
                <common:Structure>
                        <Ref agencyID="BCL" id="BCL_ANCRDT_ENTTY_C"/>
                <common:Structure>
        </message:Structure>
        <message:DataSetID>BCL_ANCRDT_T1_REF</message:DataSetID>
</message:Header>
```

5.2 Technical header datasets

The technical header datasets include common information that applies to the overall acquisition message. These datasets must include one and only one observation occurrence (detail below).

The acquisition message must include one and only one technical dataset occurrence located just after the standard SDMX header section.

The action attribute at dataset level is ignored.

5.2.1 BCL_ANCRDT_REF_HDR_C attributes (for counterparty reference data)

The attributes of the observation inside the ANCRDT_REF_HDR_C are the following :

Table 3.1: Technical header dataset BCL_ANCRDT_REF_HDR_C

Attribute name	Description
RPRTNG_AGNT_CD	RIAD Code of the Reporting Agent
DT_RFRNC	Reference date of the acquisition message in the format YYYY-MM-DD. The date must mandatorily be an end-of-month.
TYP_RPRTNG	Type of reporting. The allowed value is : BCL_ANCRDT_T1_REF
SBMSSN_TYP	Submission Type. The allowed value is : FULL_REPLACEMENT
IS_EMRGNCY_CRRCTN	Flag to specify if the data are a manual emergency correction. “true” if the file is a manual emergency correction “false” otherwise The field is optional. If not provided, “false” is assumed.

Example:

```
<message:DataSet data:structureRef="BCL_ANCRDT_REF_HDR_C"
xsi:type="BCL_ANCRDT_T1_REF:BCL_ANCRDT_REF_HDR_C"
data:dataScope="DataStructure">
        <Obs RPRTNG_AGNT_CD="LUB00999" DT_RFRNC="2018-01-31"
TYP_RPRTNG="BCL_ANCRDT_T1_REF" SBMSSN_TYP="FULL_REPLACEMENT"
IS_EMRGNCY_CRRCTN="false"/>
</message:DataSet>
```

5.2.2 BCL_ANCRDT_HDR_C attributes (for credit data)

The attributes of the observation inside the ANCRDT_HDR_C are the following:

Table 3.2: Technical header dataset BCL_ANCRDT_HDR_C

Attribute name	Description
RPRTNG_AGNT_CD	RIAD Code of the Reporting Agent
OBSRVD_AGNT_CD	RIAD Code of the Observed Agent
DT_RFRNC	Reference date of the acquisition message in the format YYYY-MM-DD. The date must mandatorily be an end-of-month. For the Survey T2Q it must be an end-of-quarter.
TYP_RPRTNG	Type of reporting. The allowed values are : BCL_ANCRDT_T1M BCL_ANCRDT_T2M BCL_ANCRDT_T2Q
SBMSSN_TYP	Submission Type. The allowed value is : FULL_REPLACEMENT
IS_EMRGNCY_CRRCTN	Flag to specify if the data are a manual emergency correction. “true” if the file is a manual emergency correction “false” otherwise The field is optional. If not provided, “false” is assumed.

Example:

```
<message:DataSet data:structureRef="BCL_ANCRDT_HDR_C"
xsi:type="BCL_ANCRDT_T1M:BCL_ANCRDT_HDR_C" data:dataScope="DataStructure">
        <Obs RPRTNG_AGNT_CD="LUB00999" OBSRVD_AGNT_CD="LUB00999"
DT_RFRNC="2018-01-31" TYP_RPRTNG="BCL_ANCRDT_T1M"
SBMSSN_TYP="FULL_REPLACEMENT" IS_EMRGNCY_CRRCTN="false"/>
</message:DataSet>
```

5.3 DataSet

A DataSet refers to a specific AnaCredit Table ([TableName] in Figure 1) and a specific action (Replace) to be applied to its content.

In turn, each DataSet includes one or more observations, corresponding to the single data records which need to be transmitted.

[TableName]

The table name must correspond to one of the AnaCredit cube ID as described in Table 1.

[Action] attribute

The action attribute defines how the system will process the content of that specific Dataset. The value has to be “Replace”.

5.4 Observations

The general format of each observation in the DataSet is the following:

```
<Obs FIELD1=”value1” FIELD2=”value2” … FIELDn=”ValueN”>
```

The list of FIELDs applicable to Datasets’ observations are defined in the Structure Items table of the BCL’s extension of the SDD (DICO) and are strictly related to the table structures described in the Regulation.

It is worth noting that the system accepts exclusively the *ungrouped observations* variant of the *StructureSpecificData* format, implying that the variables defined for the cube, if reported in the acquisition file, have to be reported at observation level.
According to the DICO, the fields in a Datasets are classified into dimensions, observation values and attributes. The dimensions are always declared as mandatory; the remaining fields are declared as optional.

Each observation is univocally identified by its key (i.e. the list of pairs field=value for all the fields declared as dimensions in the DICO).

An observation is duplicated in a DataSet if it includes two or more <Obs> tags with the same key.

An observation is duplicated in the Acquisition message if an <Obs> tag with the given key occurs two or more times in different DataSet(s) having the same *action*.

The following fields, although included in the DICO cube structure items, are not included in the Observation attributes as they are derived from the corresponding fields included in the technical header cubes (BCL_ANCRDT_REF_HDR_C / BCL_ANCRDT_ HDR_C) :

- Reporting Agent (RPRTNG_AGNT_CD dimension)
- Observed Agent (OBSRVD_AGNT_CD dimension) (only for BCL_ANCRDT_ HDR_C (for credit data))
- Reference date (DT_RFRNC dimension)

This choice aims at improving the acquisition process efficiency as (i) observations are less verbose because they avoid two redundant fields and (ii) there is no need to check the consistency between such fields reported on each and every observation and the corresponding header information.

For each field different from dimensions (except for the fields related to the multiple identifiers collection on the BCL_ANCRDT_ENTTY_C cube), the DICO provides a dual variable aimed at providing further details in case the relevant variable is null.

Those dual variables are referred as NEVs fields (Null Explanatory Value fields). Their name is equal to the filed name plus 'NEVS_' prefix.

NEVs complement the transmission of not reported data :

- Not applicable : data attributes which do not apply to the entity that it refers to (0 in the NEVS_CLLCTN code list).
- Not required : data attribute which is either explicitly specified as such in Regulation (EU) No 2016/867, or not required as decided by the relevant NCB in accordance with Regulation (EU) No 2016/867 (-5 in the NEVS_CLLCTN code list).

Example:

In the counterparty reference data collection (BCL_ANCRDT_ENTTY_C), when the "Status of legal proceedings" (LGL_PRCDNG_STTS) is "No legal actions taken" (1) then the "Date

of initiation of legal proceedings" (DT_INTTN_LGL_PRCDNGS) is "Not applicable". In this case, the DT_INTTN_LGL_PRCDNGS field must be replaced by its corresponding Null Explanatory Value (NEVS_DT_INTTN_LGL_PRCDNGS) with the "Not applicable" value (i.e. 0).

```
<Obs … LGL_PRCDNG_STTS="1" NEVS_DT_INTTN_LGL_PRCDNGS="0" … />
```

In order to improve the consistency of the transmitted data and to avoid useless increase in the acquisition file volumes, the Reporting Agents must adhere to the following rules when preparing the acquisition files:

- All the fields and NEVS resulting into a null value must be omitted,
- In case the field is "Not applicable" or "Not required" the field must not be reported. Instead the corresponding NEVS field must be reported with the corresponding values :
  - 0 : "Not applicable"
  - -5 : "Not required"
- If a field is reported, the corresponding NEVS must not be reported,
- If all the fields of a record are null or not applicable and if the record is not referenced by any other records then the overall record should be omitted instead of reporting the record key and all its NEVs.

6 Identification of the counterparties

The identification of the counterparties internally used by the Reporting Agent must be reported using the BCL_ANCRDT_ENTTY_C cube.

Each counterparty referenced in the other cubes must be identified using the BCL_ANCRDT_ENTTY_C cube.

6.1 Standard identification

If a LEI code has been assigned to a counterparty, the LEI code must be reported.

The counterparty national identifier must be provided. To do so, the “Type of entity national identifier” (TYP_ENTTY_NTNL_ID) must be provided with the associated field. The “Type of entity national identifier” to select is provided in a list maintained at the ECB.

Example :

For counterparties resident in Luxembourg, if the RCS code is to be reported, the TYP_ENTTY_NTNL_ID must be LU_RCS_CD and the corresponding LU_RCS_CD field must contain the code.

```
<Obs … TYP_ENTTY_NTNL_ID=”LU_RCS_CD” LU_RCS_CD=”LUB00999” … />
```

Other codes can optionally be provided (based on the list of the fields available) to facilitate the entity matching with RIAD at the ECB level.

6.2 Special cases

6.2.1 Not applicable type of national identifiers (*_NOTAP_CD)

The published list of national identifiers contains cases where no national identifiers are applicable (AT_NOTAP_CD, DE_NOTAP_CD, DK_NOTAP_CD, FI_NOTAP_CD, GEN_NOTAP_CD, IE_NOTAP_CD, LU_NOTAP_CD, SE_NOTAP_CD for now).

In these cases the “Type of entity national identifier” (TYP_ENTTY_NTNL_ID) must be omitted and the “Counterparty's country” (CNTRY) must be reported with the “Is national entity code not applicable” (IS_ENTTY_CD_NTNL_NA) flag set to true

Example :

- LU_NOTAP_CD :

```
<Obs … CNTRY=”LU” … IS_ENTTY_CD_NTNL_NA=”T” … />
```

6.2.2 Generic type of national identifiers (*_OTHER_CD)

The published list of national identifiers contains cases where the types of national identifiers are not clearly identified (CY_OTHER_CD, GEN_OTHER_CD for now).

In these cases the “Type of entity national identifier” (TYP_ENTTY_NTNL_ID) must be omitted and the “Type of Other Entity Identifier” (TYP_ENTTY_CD_OTHR) field must be reported with the associated “Other entity code” (ENTTY_CD_OTHR) field.

Example :

- GEN_OTHER_CD :

```
<Obs … TYP_ENTTY_CD_OTHR=”GEN_OTHER_CD” ENTTY_CD_OTHR=”AXSDFj”… />
```

7 Annexes

7.1 Documents

- BCL AnaCredit cube structures : LU_ANCRDT_C_CUBE_STRUCTURES_v1_0_4.xlsx
- BCL AnaCredit subdomains (constraints) : LU_ANCRDT_C_SUBDOMAINS_v1_0_4.xlsx
- BCL AnaCredit facets (formats) : LU_ANCRDT_C_FACETS_v1_0_4.xlsx
- A version of the SDMX structures exported from DICO (using the mapping between SMCube and SDMX) is available in the “SDMX-structures” directory.
- Differences on the definitions (facets, subdomains and cube structures) between version 1.0.3 and version 1.0.4.