GENERATING XBRL-CSV ENABLED TAXONOMIES FROM DPM 2.0

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DIGITAL REPORTING IN EUROPE 2025
EUROPEAN INSTITUTIONS DAY

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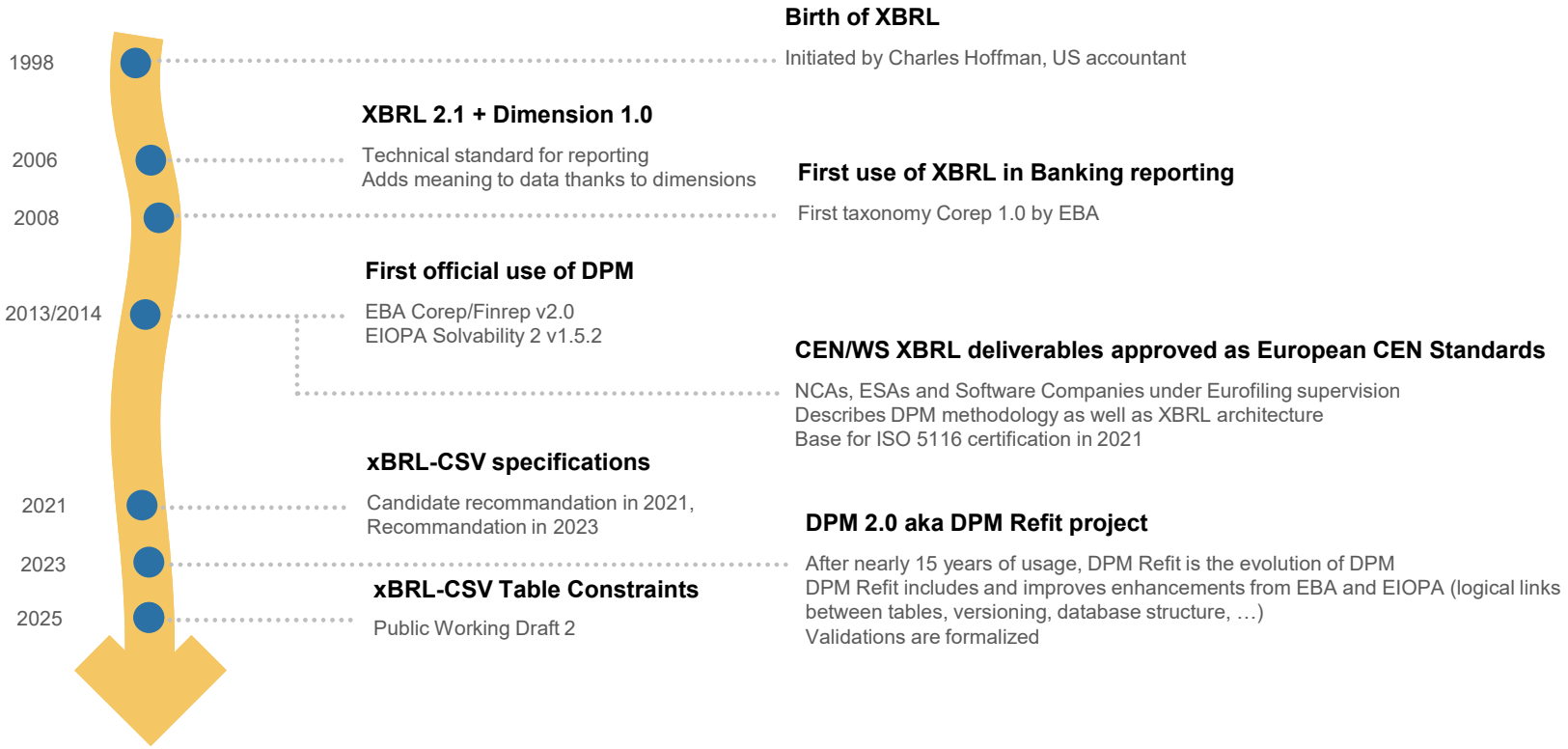
1 DPM AND XBRL EVOLUTION FOR REGULATORY REPORTING

DPM AND XBRL EVOLUTION FOR REGULATORY REPORTING

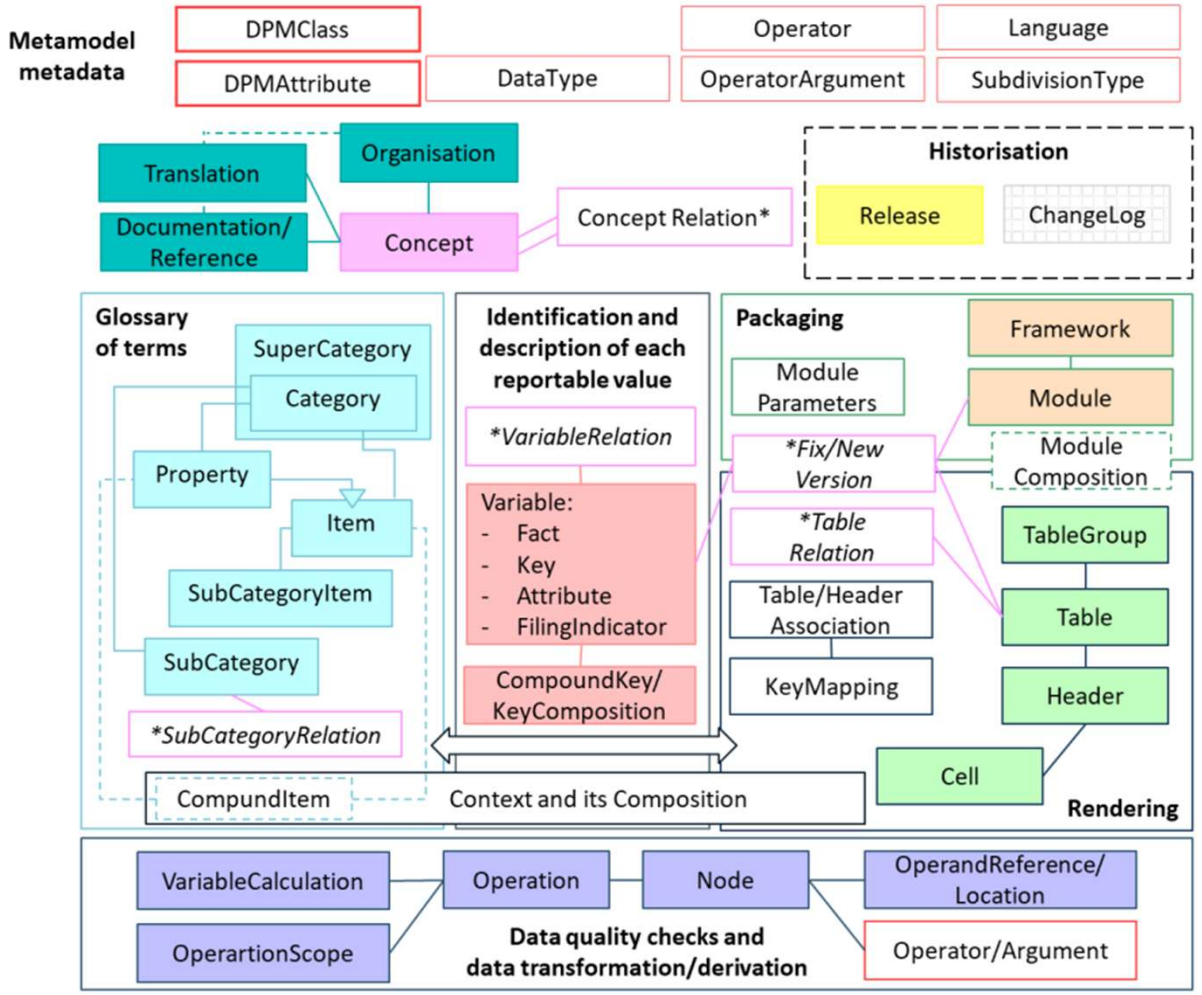
History



DPM 2.0

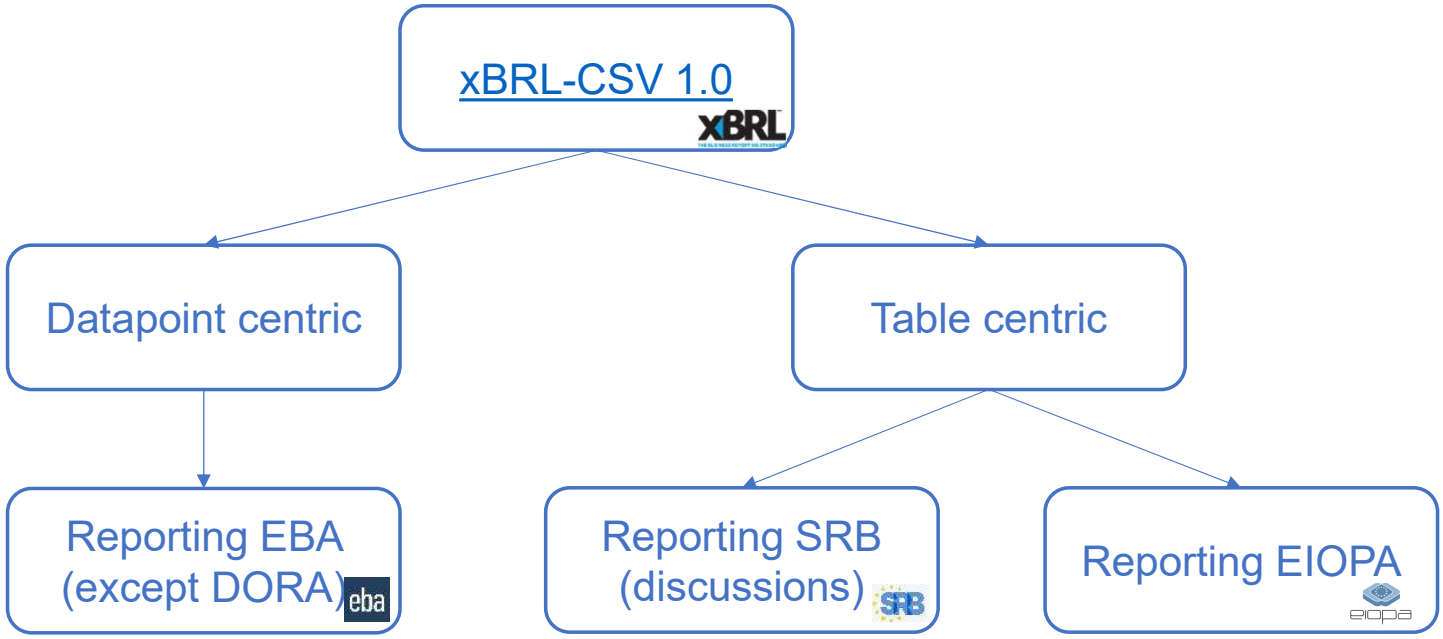
Database modelization

Cf. EBA/EIOPA dedicated webpages



XBRL-CSV

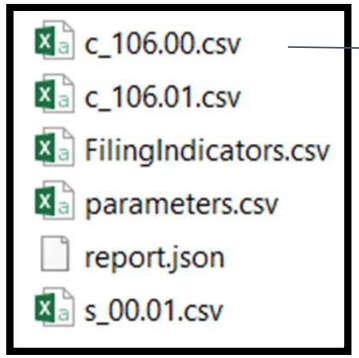
1 specification, 2 philosophies, 3 variants



XBRL-CSV

EBA example: SBPIMV – Zoom on table C 106.00

Entity sends a xBRL-CSV report – zip archive – containing parameters and values, one csv file per table, linked to defined concepts and table specifications via the datapoint id.




```
datapoint,factValue,PBE,unit
dp113368,true,1
dp113369,true,1
dp113370,true,1
dp113371,eba_ZZ:x33,1
dp113367,9615,1
dp132672,4746000,1,iso4217:USD
dp113368,true,2
dp113369,true,2
dp113370,true,2
dp113371,eba_ZZ:x34,2
dp113367,2473,2
dp132672,4826000,2,iso4217:EUR
dp113368,true,3
dp113369,true,3
dp113370,true,3
dp113371,eba_ZZ:x33,3
dp113367,3634,3
dp132672,3652000,3,iso4217:EUR
```

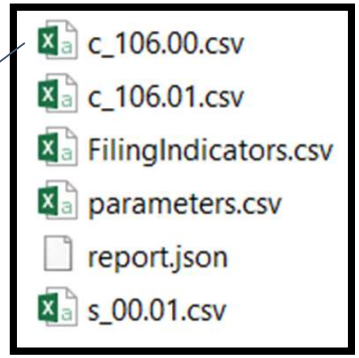
	A	B	C	D	E	F	G
1		Instrument Modelled for Var + SVaR	Instrument Modelled for IRC	Instrument Modelled for Correlation Trading	Rationale for Exclusion	Free text box	Initial Market Valuation
2	Reference portfolio/instrument	0020	0030	0040	0050	0060	0070
3	1	true	true	true	Instrument or underlying not authorised inter	9615	4746000
4	2	true	true	true	Model not authorised by regulator	2473	4826000
5	3	true	true	true	Instrument or underlying not authorised inter	3634	3652000

C 106.00 representation of xBRL-CSV filing in native XBRL software

XBRL-CSV

Alternative example: SBPIMV – Zoom on table C 106.00

Although EBA made the choice of writing only one datapoint per line to be able to report all kind of tables in one way (closed tables, tables replicated on row, column, sheet), xBRL-CSV specification let the possibility in the taxonomy to arrange datapoints as needed in the xBRL-CSV instance.




```
PBE,dp113368,dp113369,dp113370,dp113371,dp113367,dp132672,dp132672_unit
1,true,true,true,eba_ZZ:x33,9615,4746000,iso4217:USD
2,true,true,true,eba_ZZ:x34,2473,4826000,iso4217:EUR
3,true,true,true,eba_ZZ:x33,3634,3652000,iso4217:EUR
```

	A	B	C	D	E	F	G
1		Instrument Modelled for Var + SVaR	Instrument Modelled for IRC	Instrument Modelled for Correlation Trading	Rationale for Exclusion	Free text box	Initial Market Valuation
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2 DPM 1.0 TO XBRL-XML TAXONOMY

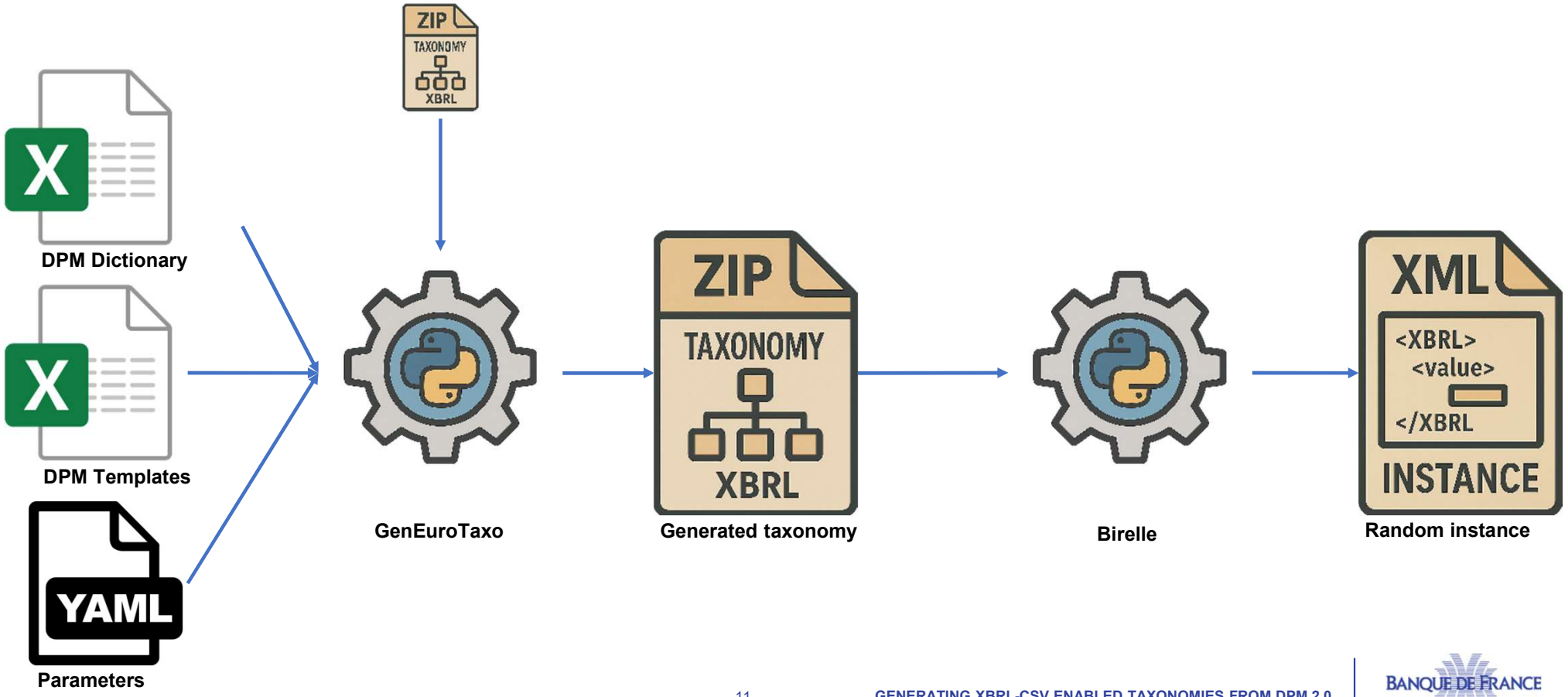
DPM 1.0 TO XBRL-XML REPORTING

In Europe

- DPM Architect
  - **Developed by Banco de España since 2015**
  - **Public and free of charge**
  - **Complete software with GUI and validation support**
  - **End of updates: End of 2024 – No support for DPM 2.0 and Taxonomy Architecture**
- Market softwares
- Custom solutions in ESAs and NCAs
  - **Some based on DPM Architect**

DPM 1.0 TO XBRL-XML REPORTING

In Banque de France: Details



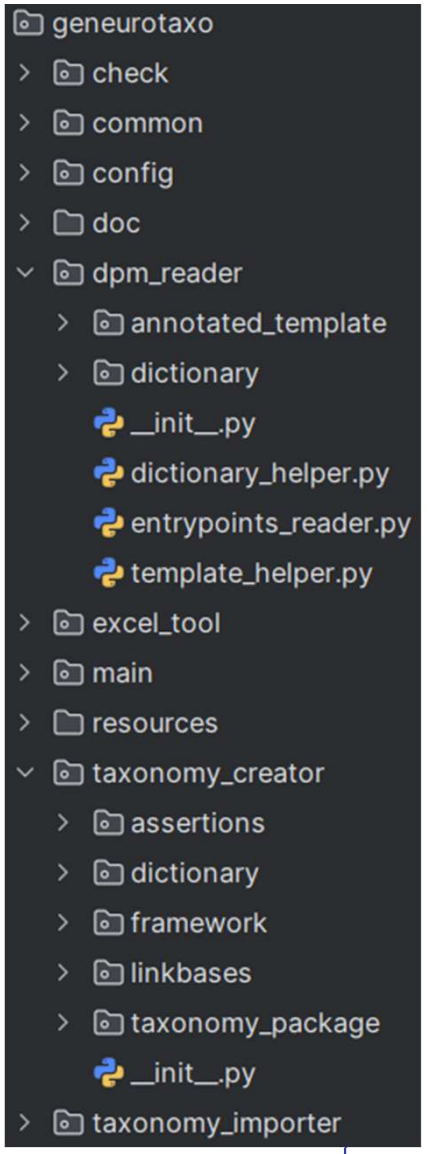
Slide 11

VL1 LE MOAL-JOUBEL Vincent (DGSI DDSA); 31/05/2025

DPM 1.0 TO XBRL-XML REPORTING

In Banque de France: Details

- **Input :**
  - Parameter file
  - DPM excel files
    - **Dictionary**
    - **Annotated templates**
  - Validation file
    - **Specific grammar**
    - **Validations are also defined directly in DPM Annotated template cells (A5 = A2 + A3 + A4)**
  - Imported taxonomies
    - **Identified by owner**
    - **Concepts / tables are referenced in the generated taxonomy**



DPM 1.0 TO XBRL-XML REPORTING

In Banque de France: Details

- **DPM Excel dictionary**

	Label	Name	Owner	Data type	Domai	Hierarc	Member	Period ty	Creation date	V
2	Metric: Entity name	si1	fire	xbrli:stringItemType				instant	01/01/2021	
3	Metric: Entity type	si2	fire	xbrli:stringItemType				instant	01/01/2021	
4	Metric: Entity country	ei3	fire	enum:enumerationItemType	GA	1		instant	01/01/2021	
5	Metric: Entity identifier	si4	fire	xbrli:stringItemType				instant	01/01/2021	
6	Metric: Contact name	si5	fire	xbrli:stringItemType				instant	01/01/2021	
7	Metric: Contact email	si6	fire	xbrli:stringItemType				instant	01/01/2021	
8	Metric: Contact phone	si7	fire	xbrli:stringItemType				instant	01/01/2021	
9	Metric: Contact role	si8	fire	xbrli:stringItemType				instant	01/01/2021	
10	Metric: Contact department	si9	fire	xbrli:stringItemType				instant	01/01/2021	
11	Metric: Action taken	si11	fire	xbrli:stringItemType				instant	01/01/2021	
12	Metric: Action planned	si12	fire	xbrli:stringItemType				instant	01/01/2021	
13	Metric: Public reaction	si13	fire	xbrli:stringItemType				instant	01/01/2021	
14	Metric: Comms issue	si14	fire	xbrli:stringItemType				instant	01/01/2021	
15	Metric: Level of command structure	ei15	fire	enum:enumerationItemType	LV	1		instant	01/01/2021	
16	Metric: Name of command structure	si16	fire	xbrli:stringItemType				instant	01/01/2021	
17	Metric: Body notified	si17	fire	xbrli:stringItemType				instant	01/01/2021	
18	Metric: Time of report	di18	fire	xbrli:dateItemType				instant	01/01/2021	
19	Metric: Time of occurrence	di19	fire	xbrli:dateItemType				instant	01/01/2021	
20	Metric: Time of detection	di20	fire	xbrli:dateItemType				instant	01/01/2021	
21	Metric: Time of resolution	di21	fire	xbrli:dateItemType				instant	01/01/2021	
22	Metric: Time of closure	di22	fire	xbrli:dateItemType				instant	01/01/2021	
23	Metric: Time of next update	di23	fire	xbrli:dateItemType				instant	01/01/2021	
24	Metric: Service type	si24	fire	xbrli:stringItemType				instant	01/01/2021	
25	Metric: Service disruption type	ei26	fire	enum:enumerationItemType	ST	2		instant	01/01/2021	
26	Metric: Affected end user number	ii27	fire	xbrli:integerItemType				instant	01/01/2021	
27	Metric: Affected end user percentage	pi29	fire	num:percentItemType				instant	01/01/2021	
28	Metric: Affected transaction percentage	pi31	fire	num:percentItemType				instant	01/01/2021	
29	Metric: Resource properties	ei33	fire	enum:enumerationItemType	RP	1		instant	01/01/2021	
30	Metric: Service Resource notes	si34	fire	xbrli:stringItemType				instant	01/01/2021	
31	Metric: FIRE report type	ei35	fire	enum:enumerationItemType	RT	1		instant	01/01/2021	
32	Metric: FIRE report language	si36	fire	xbrli:stringItemType				instant	01/01/2021	
33	Metric: FIRE report currency	ei37	fire	enum:enumerationItemType	CU	1		instant	01/01/2021	

Versioning | Owners | Domains | Dimensions | **Metrics** | AM | BA | CT | CS | CU | DM | GA | GL | IS | LV

DPM 1.0 TO XBRL-XML REPORTING

In Banque de France: Details

- DPM Excel annotated templates

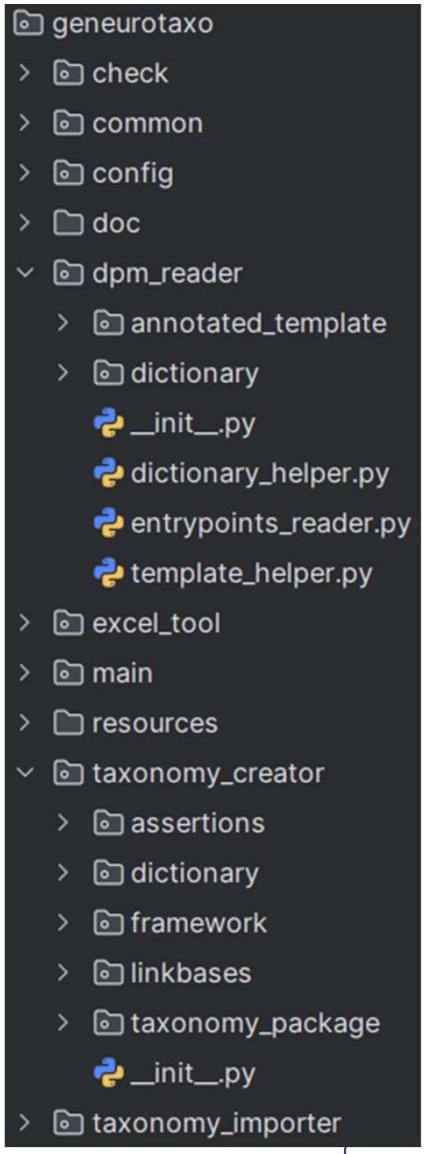
	A	B	C
1	FE.02.01		
2	**Reporting Details**		
3			
4	FE.02.01.01		
5			
6	**Reporting entity**		
7			
8	Entity name	Entity country	Ultimate parent name
9	C0010	C0020	C0030
10	C0010	C0020	C0030
11	Metric: Entity name	Metric: Entity country	Metric: Ultimate parent name
12			
13			
14	FE.02.01.02		
15			
16	**Entity types**		
17			
18	Entity type row ID	Schema	Entity type
19	C0110	C0120	C0130
20	C0110	C0120	C0130
21	*artificial key*	*	Metric: Entity type
22	ETI: Entity type row ID	SCH: Schema	

Entry points | FE.01.01 | FE.02.01

DPM 1.0 TO XBRL-XML REPORTING

In Banque de France: Details

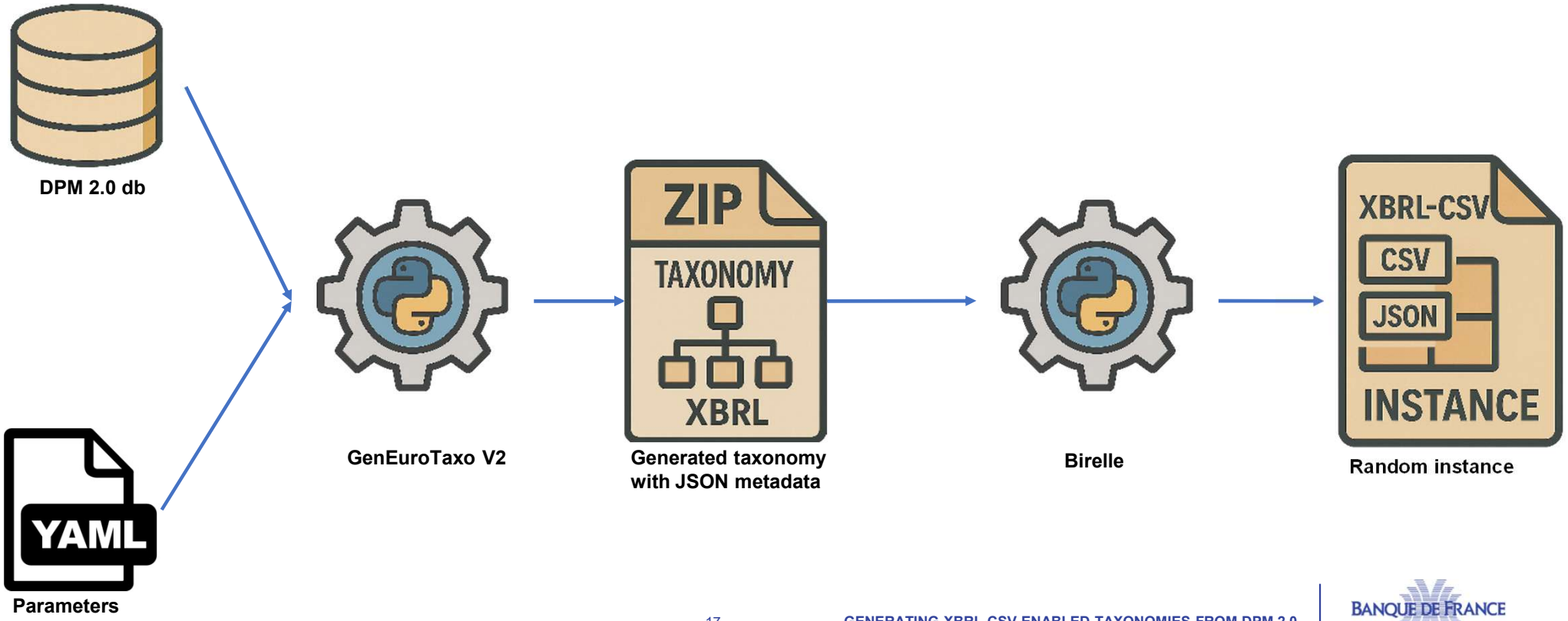
- **Output:**
  - Generated taxonomy
    - **Zip according to Taxonomy Packages specifications**
  - Validation documentation
- **Output – Taxonomy processor:**
  - Random skeleton XBRL XML instances
  - Description of concepts and tables in CSV
    - **For internal BdF needs**



3 PROCESSING DPM 2.0

PROCESSING DPM 2.0

In Banque de France: Details

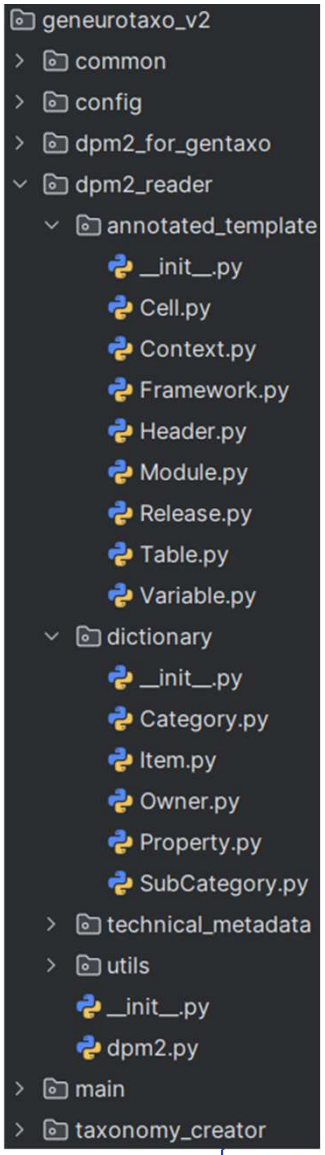


PROCESSING DPM 2.0

Geneurotaxo V2 can import

- Access database (like EBA)
- A set of CSV files
- Can easily add support for SQLITE database

Geneurotaxo V2 loads concepts for a framework for a specific release, and will load concepts from older releases if referenced



PROCESSING DPM 2.0

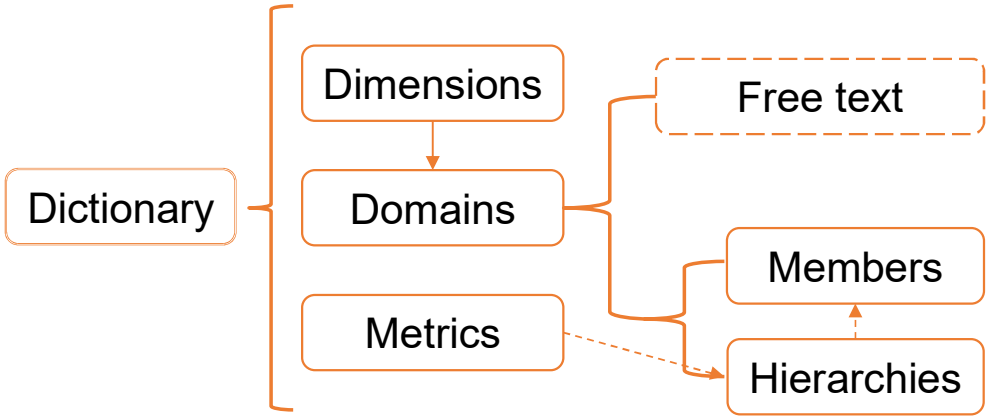
Needed concepts for the release are translated into python objects

```
# Load dictionary

self.categories = Categories.init_from_ntable(content_reader.category)
self.items = Items.init_from_ntable(content_reader.item, content_reader.item_category,
                                    self.categories, self.release)
self.categories.fill_items(self.items)
self.properties = Properties.init_from_ntable(content_reader.property, content_reader.property_category,
                                              self.items, self.categories, datatypes, self.release)
self.categories.fill_properties(self.properties)
self.sub_categories = SubCategories.init_from_ntable(content_reader.sub_category,
                                                     content_reader.sub_category_version,
                                                     content_reader.sub_category_item,
                                                     self.items, self.categories, self.release)
```

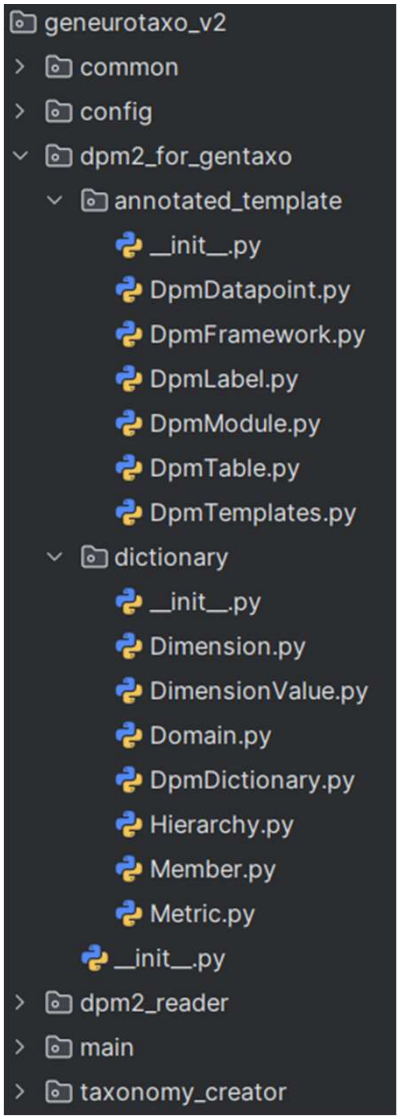
PROCESSING DPM 2.0

Once processed, DPM 2.0 information is translated into compatible XBRL concepts.



DPM 2.0 terms:

- Domain ~ Category
- Metric ~ Property
- Member ~Item
- Dimension ~ Property
- Hierarchy ~Subcategory



PROCESSING DPM 2.0

- **Example: EBA DORA Reporting B_04.01**

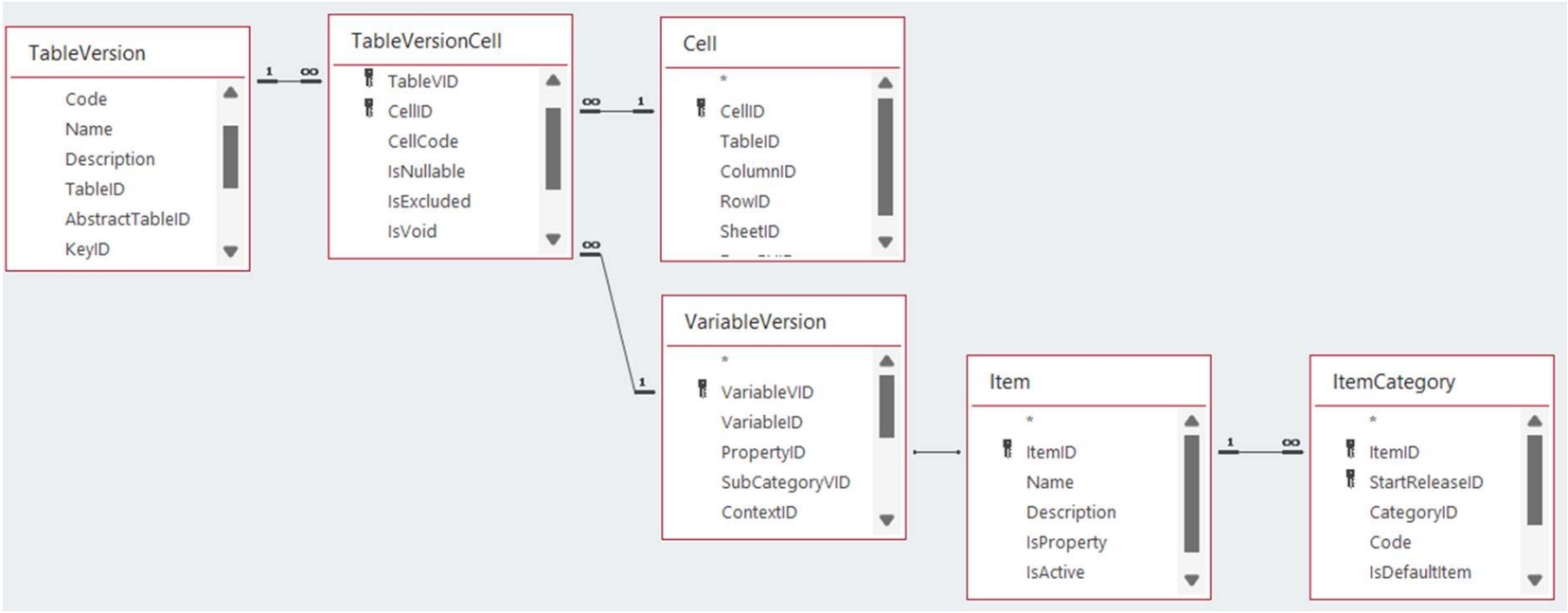
B_04.01 - Entities making use of the ICT services

		Columns			
		Contractual arrangement reference number	LEI of the entity making use of the ICT service(s)	Nature of the entity making use of the ICT service(s)	Identification code of the branch
		0010	0020	0030	0040
Rows	Open Rows	480197 <Contractual arrangement reference number between the financial entity or, in case of a group, the group subsidiary and the direct ICT third-party service provider>	480201 <Lei code of the entity making use>	483520 [Branch/not a branch]	480218 <Identification code of the branch>
	Main Property			(ei1510) Branch/not a branch[ZZ:ZZ93]	
	(CRZ:CR) Contractual arrangement reference number between the financial entity or, in case of a group, the group subsidiary and the direct ICT third-party service provider	(CR:) <Key value>			
	(qLES:LE) Lei code of the entity making use		(LE:) <Key value>		
	(RCA:CO) Role in the contractual arrangement			(CO:x11) User	
	(ISB:LE) Identification code of the branch				(LE:) <Key value>

PROCESSING DPM 2.0

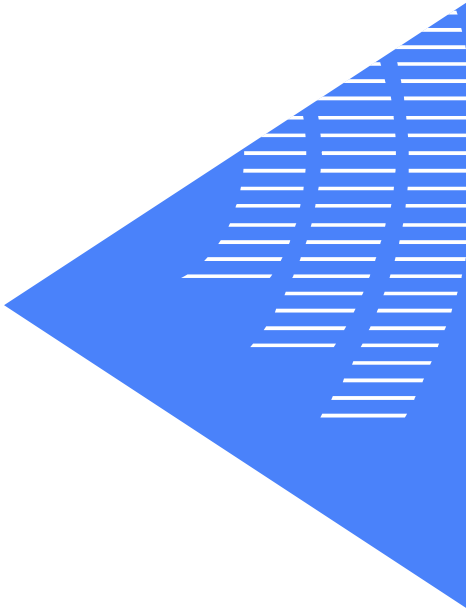
- ## Example: EBA DORA Reporting B_04.01

Getting metric information



TableVersion	Name	ItemCategor	CellCode
B_04.01	Branch/not a branch	ei1510	{B_04.01, r*, c0030}

4 ADDING METADATA TO ENABLE XBRL-CSV REPORTING



ADDING METADATA TO ENABLE XBRL-CSV REPORTING

Focus on open tables on rows

- **Most common case for granular reporting**

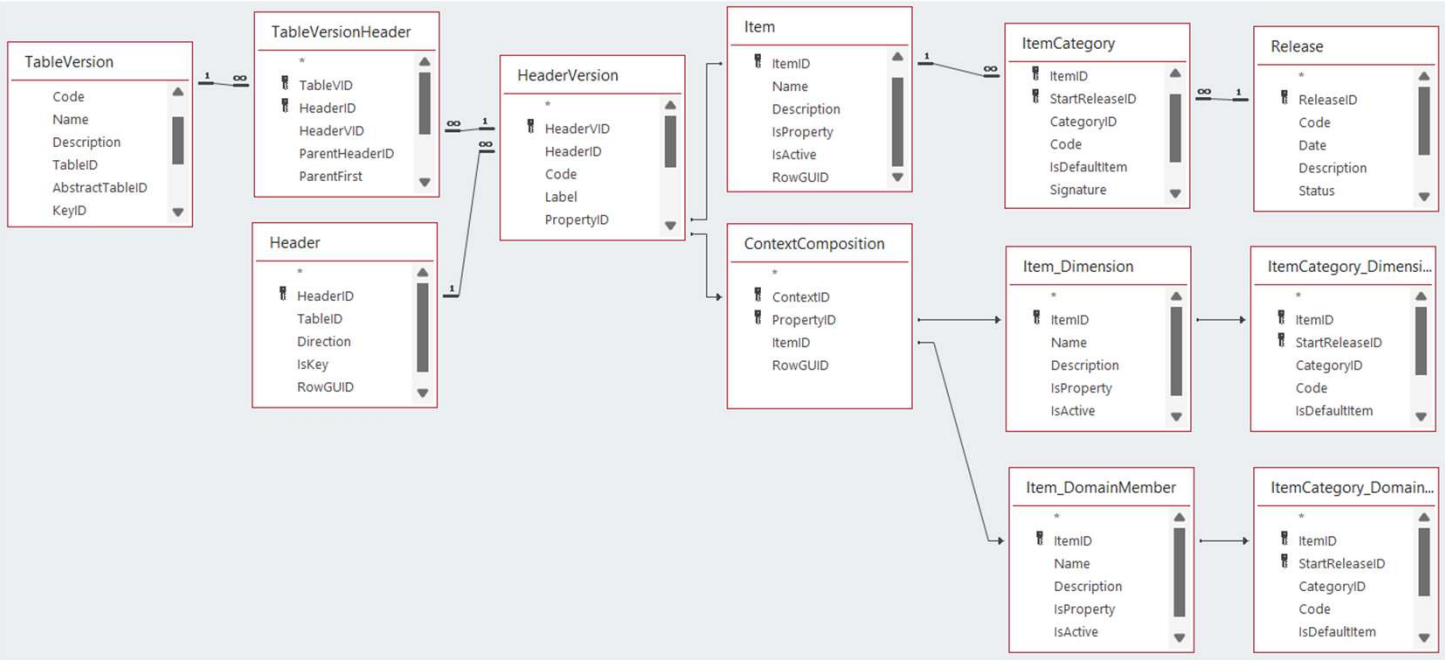
Json metadata

- **Following base OIM / xBRL-CSV specifications**
  - Defining how the CSV files are formatted
  - Freezing instructions into the taxonomy: Not mandatory, it's a choice
  - Information can be deduced from Hypercube and Table Linkbase information

ADDING METADATA TO ENABLE XBRL-CSV REPORTING

- ## Example: EBA DORA Reporting B_04.01

Getting rendering information



TableVersion	Dire	HeaderVersi	IsActive	Item.Name	ItemCategory.Code	Release	HeaderVersic	ContextCom	Item_Dimens	ItemC	Item_Domai	ItemCategor
B_04.01	X	0030	-1	Branch/not a branch	ei1510	3.5	777292	777292	Role in the cont	RCA	User	x11
B_04.01	X	0010	-1	Contractual arrangement reference	CRZ	3.5						
B_04.01	X	0020	-1	Lei code of the entity making use	qLES	4.0						
B_04.01	X	0040	-1	Identification code of the branch	ISB	3.5						

ADDING METADATA TO ENABLE XBRL-CSV REPORTING

Json metadata

- **Following base OIM / xBRL-CSV specifications**

```
"tableTemplates": {
    "B_04-01": {
        "columns": {
            "c0010": {
                "eba:documentation": {
            },
            "c0020": {
                "eba:documentation": {
            },
            "c0030": {
                "dimensions": {
                    "concept": "eba_met_3.5:ei1510",
                    "eba_dim_3.5:RCA": "eba_CO:x11"
                },
                "eba:documentation": {
            },
            "c0040": {
                "eba:documentation": {
            }
        },
        "dimensions": {
            "eba_dim_3.5:CRZ": "$c0010",
            "eba_dim_3.5:ISB": "$c0040",
            "eba_dim_4.0:qLES": "$c0020"
        },
```

ADDING METADATA TO ENABLE XBRL-CSV REPORTING

Json metadata

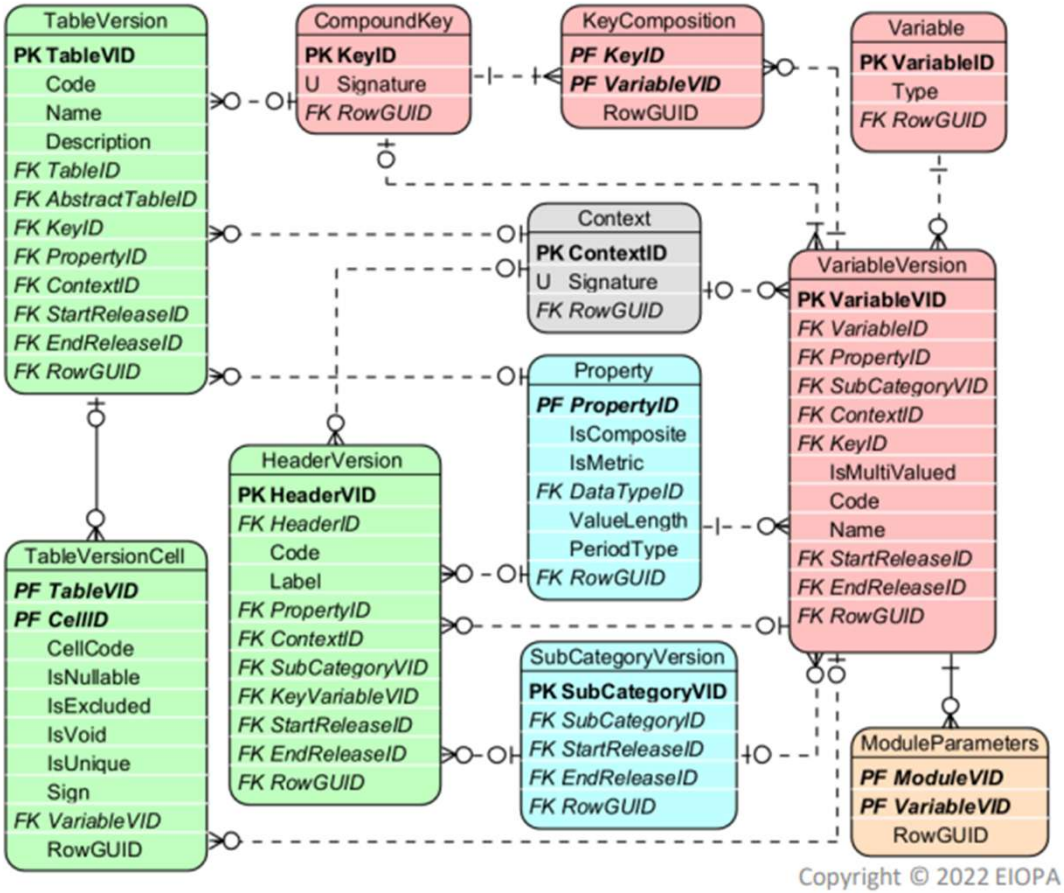
- **Adding information defined in xBRL-CSV Table Constraints PWD2**
  - Define Primary/Unique/Reference keys
    - **No need to define complex validations rules**
    - **Optimized processing of xBRL-CSV information**
  - Define constraints on values
    - **Type, optional, nillable, allowed values and pattern, restrictions on period, duration an timezone**
    - **Reduce the numbers of custom validations**

ADDING METADATA TO ENABLE XBRL-CSV REPORTING

Reading table keys

- Keys are defined through TableVersion / KeyComposition
- Reference to keys are stored in KeyHeaderMapping / TableAssociation

Cf. DPM Metamodel after Refit, Eurofiling Conference 2022, Bartosz Ochocki and Michał Skopowski for EIOPA



ADDING METADATA TO ENABLE XBRL-CSV REPORTING

Example: EBA DORA Reporting -

KeyComposition | **TableVersion** | TableAssociation | KeyHeaderMapping | CompoundKey

TableVID	Code	Name	Description	TableID	AbstractTabl	KeyID
5988	B_03.02	ICT third-party service		1790		1190

KeyComposition | TableVersion

KeyID	VariableVID
1190	480197
1190	480199

VariableVersion | KeyComposition | T

VariableVID	VariableID	PropertyID
480197	480197	1012401908

Item | VariableVersion | KeyComposition

ItemID	Name
1012401908	Contractual arrangement reference number

B_03.02 - ICT third-party service providers signing the Contractual arrangements for providing ICT service(s)

		Columns		
		Contractual arrangement reference number	Identification code of ICT third-party service provider	Type of code to identify the ICT third-party service provider
		0010	0020	0030
Rows	Open Rows	480197 <Contractual arrangement reference number between the financial entity or, in case of a group, the group subsidiary and the direct ICT third-party service provider>	480199 <Identification code of the ICT third-party service provider>	3296067 [Type of code to identify the ICT third-party service provider]
	Main Property			(qNMX) Type of code to identify the ICT third-party service provider[qCO:new_CO2]
	(CRZ:CR) Contractual arrangement reference number between the financial entity or, in case of a group, the group subsidiary and the direct ICT third-party service provider	(CR:) <Key value>		
	(ICT:IS) Identification code of the ICT third-party service provider		(IS:) <Key value>	

KeyComposition | TableVersion | **TableAssociation** | KeyHeaderMapping | CompoundKey

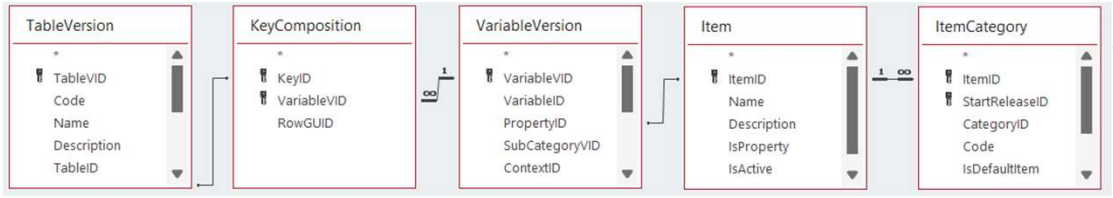
AssociationID	ChildTableVID	ParentTable\	Name	Description	IsIdentifying	IsSubtype	SubtypeDiscr	ParentCardin	ChildCardina
13	5988	6062	R9 Contractual arr. reference number must match		0	0		1	0_n
16	5988	5986	R19 Identification code of the branch must match		0	0		1	0_n

ADDING METADATA TO ENABLE XBRL-CSV REPORTING

Example: EBA DORA Reporting B_03.02

Primary keys

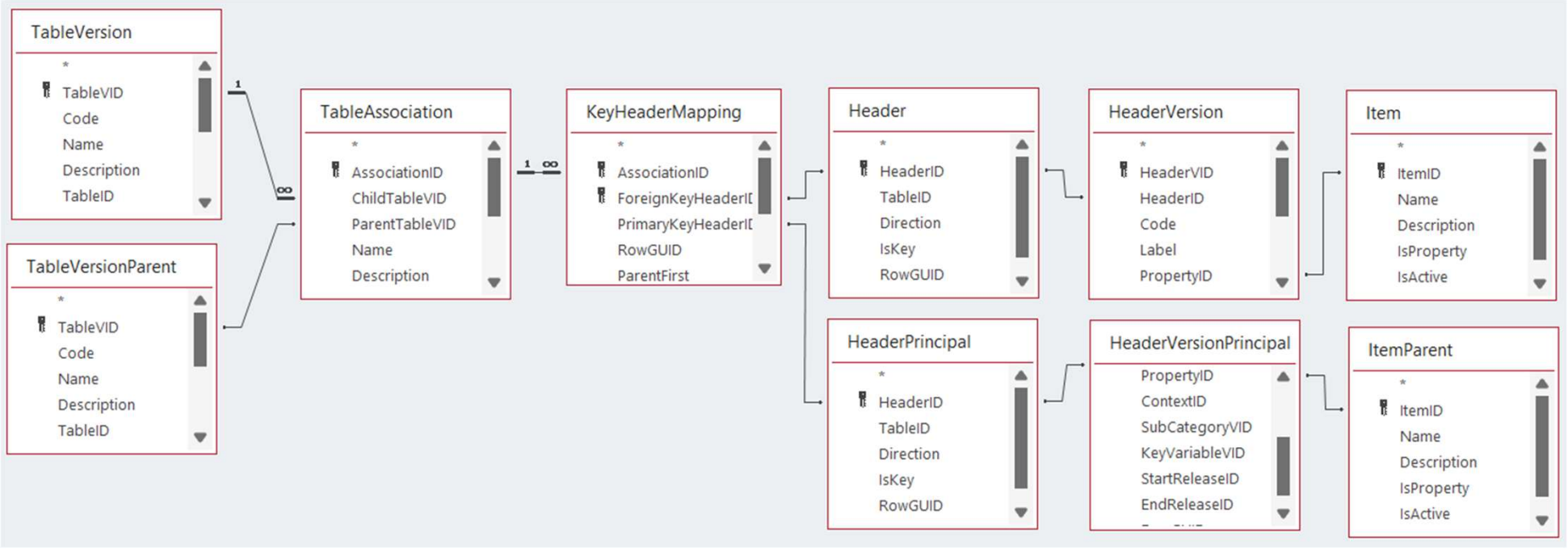
B_03.02 - ICT third-party service providers signing the Contractual arrangements for providing ICT service(s)			
		Columns	
		Contractual arrangement reference number	Identification code of ICT third-party service provider	Type of code to identify the ICT third-party service provider
		0010	0020	0030
Rows	Open Rows	480197 <Contractual arrangement reference number between the financial entity or, in case of a group, the group subsidiary and the direct ICT third-party service provider>	480199 <Identification code of the ICT third-party service provider>	3296067 [Type of code to identify the ICT third-party service provider]
	Main Property			(qNMX) Type of code to identify the ICT third-party service provider[qCO:new_CO2]
	(CRZ:CR) Contractual arrangement reference number between the financial entity or, in case of a group, the group subsidiary and the direct ICT third-party service provider	(CR:) <Key value>		
	(ICT:IS) Identification code of the ICT third-party service provider		(IS:) <Key value>	



TableVer	KeyID	Name	ItemID	ItemCategory.Code
B_03.02	1190	Contractual arrangement reference number	1012401908	CRZ
B_03.02	1190	Identification code of the ICT third-party ser	1012401953	ICT

ADDING METADATA TO ENABLE XBRL-CSV REPORTING

Example: EBA DORA Reporting B_03.02 - Foreign keys



TableVersion	TableVersion	TableAssociation.Name	Item.ItemID	Item.Name	ItemParent.ItemID	ItemParent.Name
B_03.02	B_02.01	R9 Contractual arr. reference num	1012401908	Contractual arrangement reference	1012401908	Contractual arrangement reference
B_03.02	B_05.01	R19 Identification code of the bra	1012401953	Identification code of the ICT third-	1012401953	Identification code of the ICT third-

ADDING METADATA TO ENABLE XBRL-CSV REPORTING

Table Constraints PWD2 associated to modelization of B_03.02

```
"tc:keys": {
    "primary": {
        "name": "B_03-02_PK",
        "fields": [
            "c0010",
            "c0020"
        ],
        "sortedRows": false
    },
    "reference": [
        {
            "fields": [
                "c0010"
            ],
            "referencedKeyName ": "B_02-01_PK",
            "name": "R9",
            "skipNils": false
        },
        {
            "fields": [
                "c0020"
            ],
            "referencedKeyName ": "B_05-01_PK",
            "name": "R19",
            "skipNils": false
        }
    ]
}
```

5 NEXT STEPS

NEXT STEPS

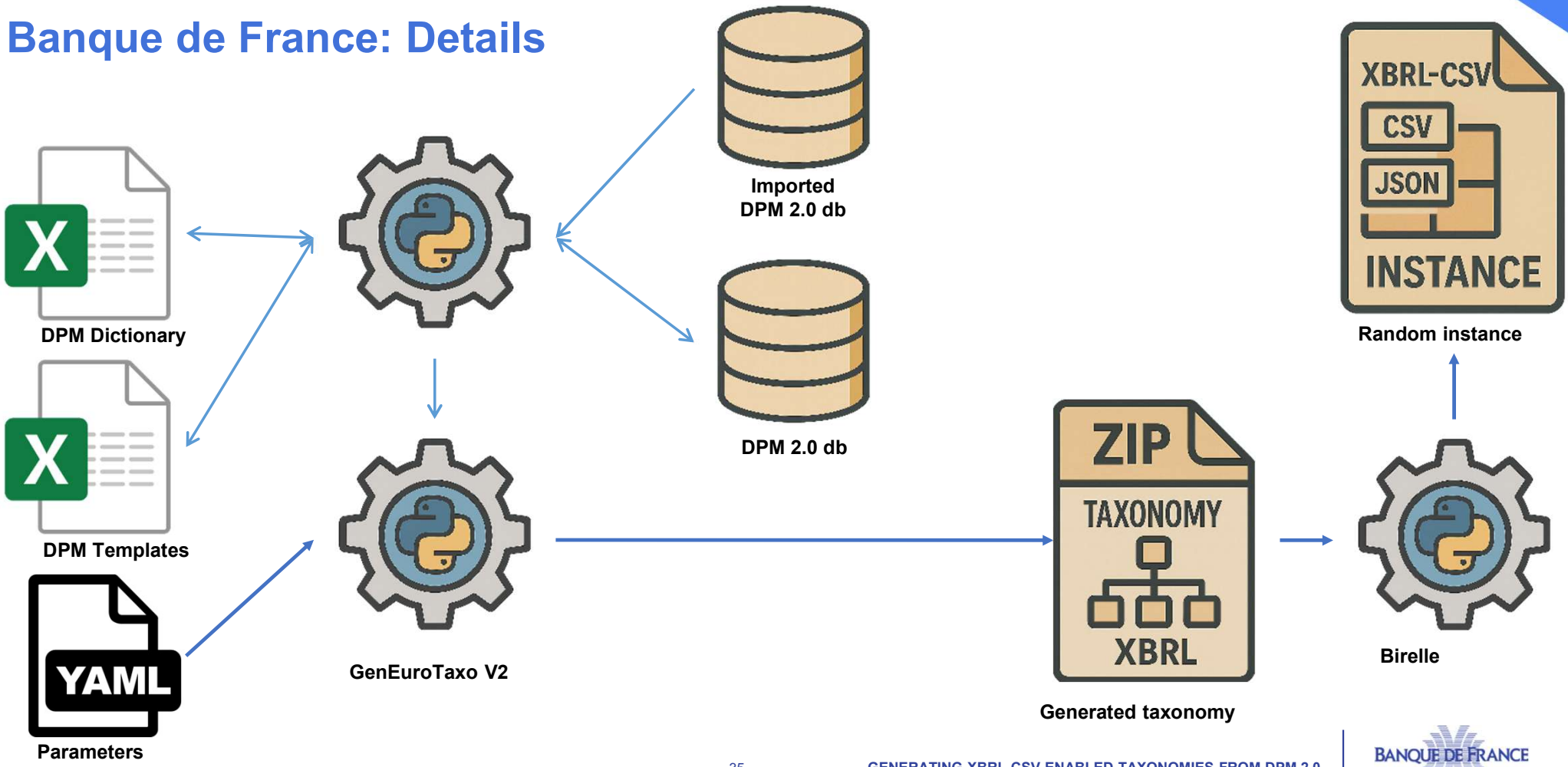
- **Propose a simple interface for easy national taxonomy creation**
  - Enriched Excel DPM, with new notations to cover a maximum of the DPM 2.0 standard, as an input for GenEuroTaxo V2
- **Use of DPM 2.0 python processor for other purposes**
  - Extensions: Dealing with multiple DPM 2.0 databases
  - Export: Create an loadable Excel version from DPM 2.0 content
  - Export: Create a DPM 2.0 database in CSV or SQLite
- **Full support of Taxonomy Architecture 2.0**

  Representation in XBRL of the Data Point Model v2

  Eurofiling Taxonomy architecture update for DPM 2.0

NEXT STEPS

In Banque de France: Details



NEXT STEPS

{owner location}	{owner namespace}	{owner prefix}
http://www.eurofiling.info/eu/fr/xbrl	http://www.eurofiling.info/xbrl/	eu
http://www.eba.europa.eu/eu/fr/xbrl/crr	http://www.eba.europa.eu/xbrl/crr	eba
http://www.eiopa.europa.eu/eu/fr/xbrl/crr	http://www.europa.europa.eu/xbrl/crr	eiopa

Architecture file structure