EUROPEAN CENTRAL BANK

EUROSYSTEM

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ECB – DG Statistics

Banks Integrated Reporting Dictionary (BIRD)

Eurofiling seminar

08/06/2017

The BIRD is a component of the overall strategy

Supporting banks in integrating their own data management systems:

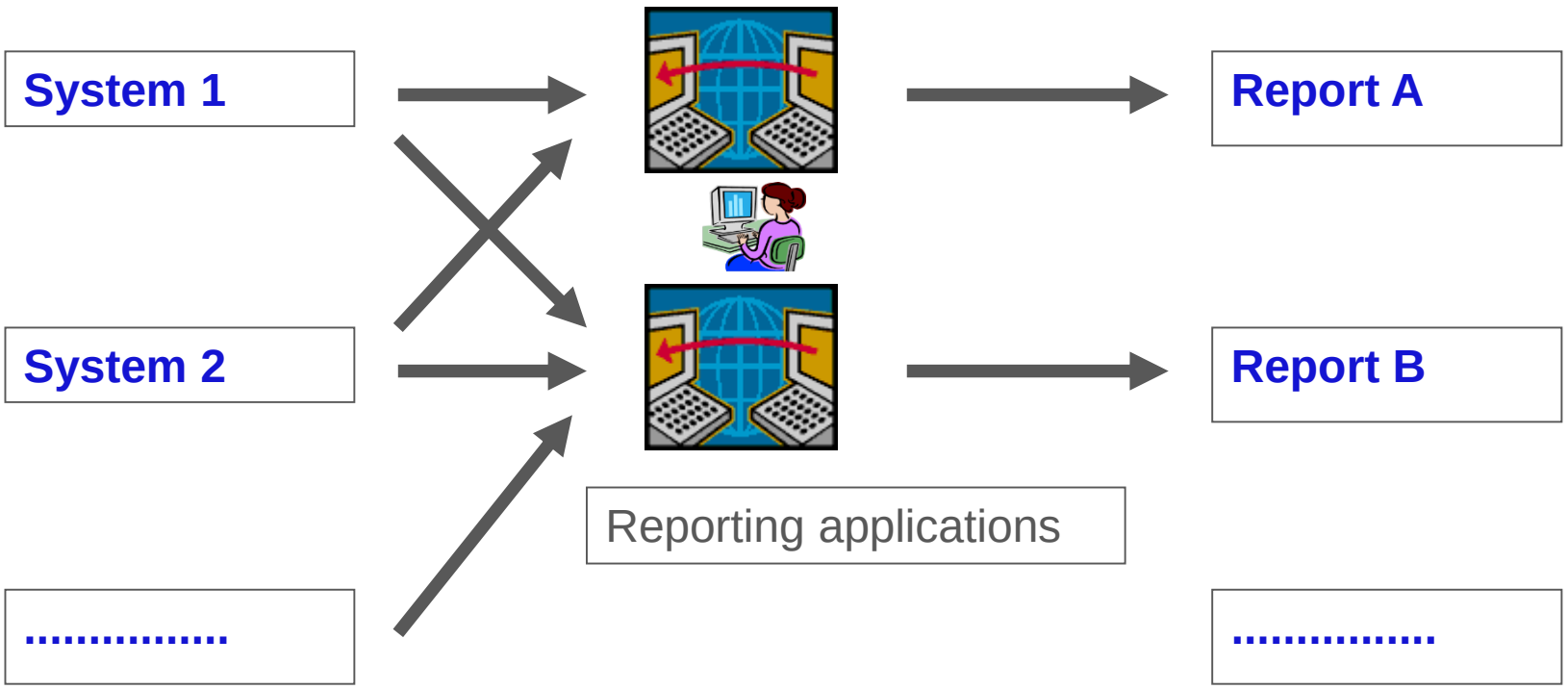
- streamline the process of reporting
- improve consistency and quality of reports

Key considerations:

- *Data quality for users* heavily depends on the *quality of data received* from respondents
- *Promoting improvements* in banks' processes
- *Responsibility* remains with the reporting banks

Banks' processes to produce reports

NON-INTEGRATED APPROACH



Banks' processes to produce reports

INTEGRATED APPROACH

System 1

System 2

.....

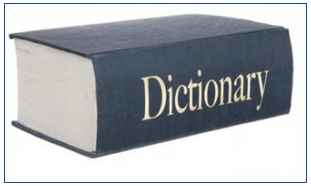
Input Data Warehouse

Report A

Report B

.....

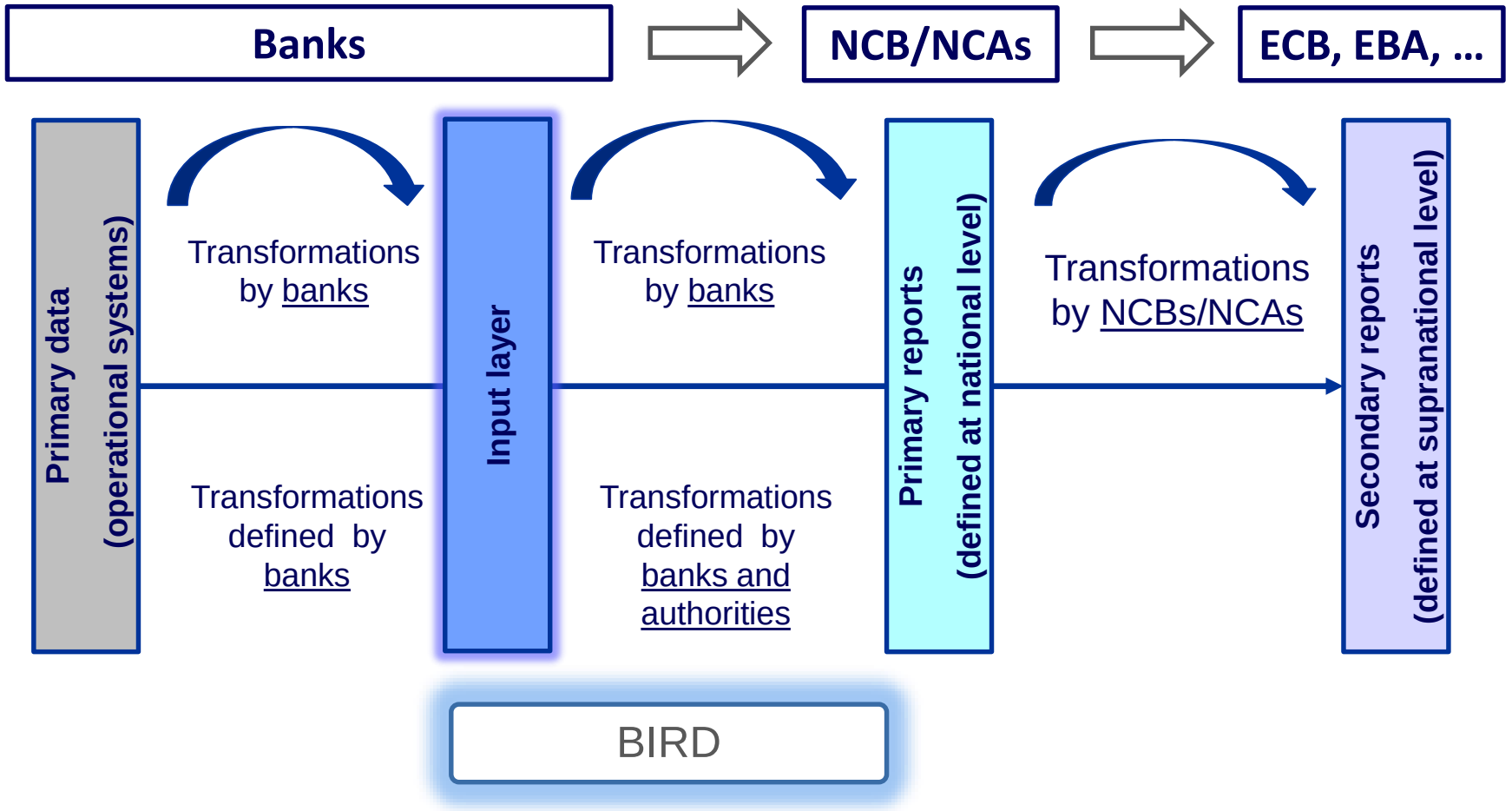
Defined by banks and authorities in cooperation



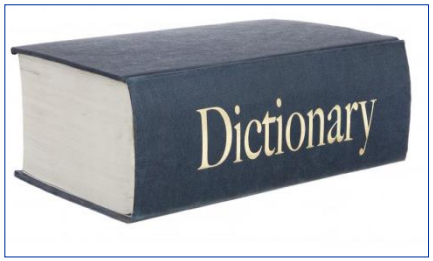
BIRD

The overall data production process

The role of BIRD



BIRD features



- **precise description of the input data to be extracted from banks' internal IT systems; and**
- **data transformations needed to derive the reports requested by authorities**

✓ Carried out and maintained by *banks* and *authorities* in close cooperation

✓ Available as a "public good" to banks and all interested parties

✓ Adoption is voluntary

✓ Described in a natural or a formal language readable by IT solutions; but it is not an IT tool itself

BIRD key facts

BIRD methodology

- **Dataset definition** (SMCube methodology)

How to define cubes / datasets?

- **Description of transformations** (Validation and Transformation Language (VTL))

How to describe a transformation from one dataset into another dataset?

- **Additional information** (technical guidelines)

Additional instructions / information about the input layer (and how to feed it)

SMCube methodology consists of

- **Building blocks** (i.e. variables, domains, subdomains, members)
- Used to define **cubes / datasets**

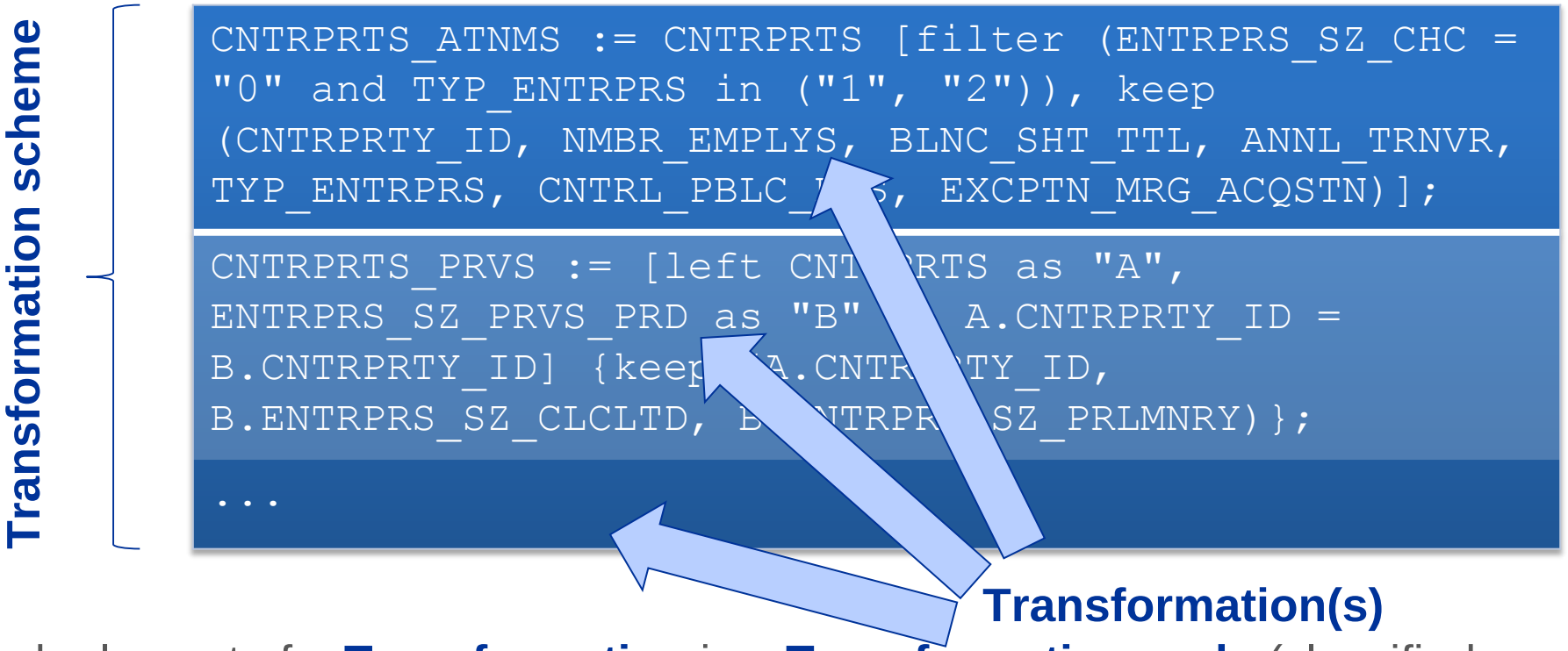
CUBE_ID	VARIABLE_ID	VARIABLE_ROLE	SUBDOMAIN_ID
ANCRDT_ENTTY	DT_RFRNC	**D**	DT_FLL
ANCRDT_ENTTY	ENTTY_ID	**D**	STRNG_RSTRCTD_ID
ANCRDT_ENTTY	ACCNTNG_FRMWK_SL	O	ACCNTNG_FRMWK_ANCRDT_STGNG
ANCRDT_ENTTY	ANNL_TRNVR	O	MNTRY_NN_NGTV_2D
ANCRDT_ENTTY	BLNC_SHT_TTL	O	MNTRY_ALL_2D
ANCRDT_ENTTY	CNTRY	O	ISO3166_STGNG
ANCRDT_ENTTY	CTY	O	STRNG_255_ASCII_PRNTBL
ANCRDT_ENTTY	DT_ENTRPRS_SZ	O	DT_FLL
ANCRDT_ENTTY	DT_INTTN_LGL_PRCDNGS	O	DT_FLL
ANCRDT_ENTTY	ECNMC_ACTVTY	O	NACE_LVLS2TO4_STGNG
ANCRDT_ENTTY	ENTRPRS_SZ	O	SZ_ANCRDT_STGNG
ANCRDT_ENTTY	ENTTY_NTNL_ID	O	STRNG_RSTRCTD_ID
ANCRDT_ENTTY	HD_OFFC_UNDRT_ID	O	STRNG_RSTRCTD_ID
ANCRDT_ENTTY	IMMDT_PRNT_UNDRT_ID	O	STRNG_RSTRCTD_ID
ANCRDT_ENTTY	INSTTTNL_SCTR	O	INSTTTNL_SCTR_ANCRDT_STGNG
ANCRDT_ENTTY	LEI	O	STRNG_PTTRN_LEI
ANCRDT_ENTTY	LGL_FRM	O	STRNG_255_ASCII_PRNTBL
ANCRDT_ENTTY	LGL_PRCDNG_STTS	O	LGL_PRCDNG_STTS_ANCRDT_STGNG
ANCRDT_ENTTY	NM_ENTTY	O	STRNG_255_ASCII_PRNTBL
ANCRDT_ENTTY	NMBR_EMPLYS	O	RL_NN_NGTV_2D
ANCRDT_ENTTY	PSTL_CD	O	STRNG_255_ASCII_PRNTBL
ANCRDT_ENTTY	STRT	O	STRNG_255_ASCII_PRNTBL
ANCRDT_ENTTY	TRRTRL_UNT	O	NUTS3_WNA
ANCRDT_ENTTY	ULTMT_PRNT_UNDRT_ID	O	STRNG_RSTRCTD_ID

Validation and Transformation Language (VTL)

- Dataset based language
- Provided / documented by the **SDMX community**
- Allows us to describe transformations from datasets into other datasets (e.g. *input layer* → *output layer*)
- Enables an **univocal representation** of transformations in the BIRD database (i.e. BIRD interpretation of **SDMX information model for transformations**)

Validation and Transformation Language (VTL) – terminology

***SDMX information model* for transformations**



Each element of a **Transformation** is a **Transformation node** (classified as *reference*, *constant* and *operator node*). Such **Transformation nodes** may contain a “tree structure”.

VTL univocal representation in BIRD

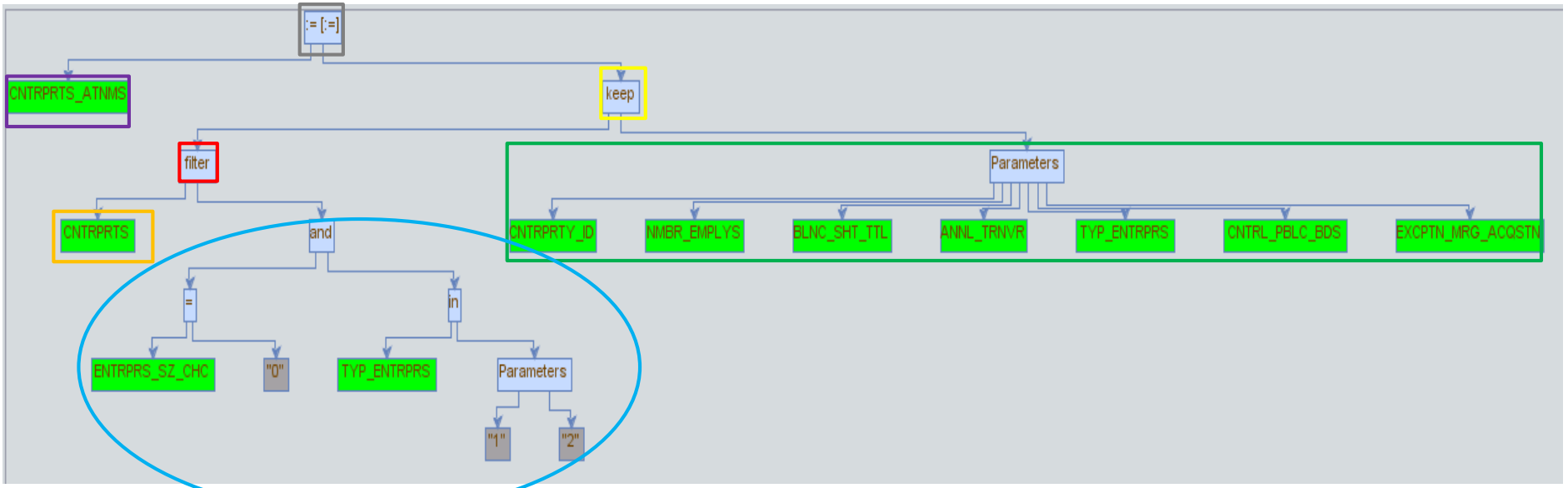
```
CNTRPRTS_ATNMS := CNTRPRTS
                  [filter
(ENTRPRS_SZ_CHC = "0" and TYP_ENTRPRS in ("1", "2")),
                  keep
(CNTRPRTY_ID, NMBR_EMPLYS, BLNC_SHT_TTL, ANNL_TRNVR,
 TYP_ENTRPRS, CNTRL_PBLC_BDS, EXCPTN_MRG_ACQSTN)];
```

CNTRPRTS								
CNTRPRTY_ID	ANNL_TRNVR	BLNC_SHT_TTL	CNTRL_PBLC_BDS	EXCPTN_MRG_ACQSTN	NMBR_EMPLYS	TYP_ENTRPRS	ENTRPRS_SZ_CHC	…
EntityA	13	31	2	2	19	1	0	…
EntityB	**11**	**29**	**1**	**2**	**23**	**2**	**1**	…
EntityC	**17**	**37**	**2**	**2**	**7**	**3**	**0**	…
EntityD	19	7	0	2	5	1	0	…
…	…	…	…	…	…	…	…	…

CNTRPRTS_ATNMS						
CNTRPRTY_ID	ANNL_TRNVR	BLNC_SHT_TTL	CNTRL_PBLC_BDS	EXCPTN_MRG_ACQSTN	NMBR_EMPLYS	TYP_ENTRPRS
EntityA	13	31	2	2	19	1
EntityD	19	7	0	2	5	1
…	…	…	…	…	…	…

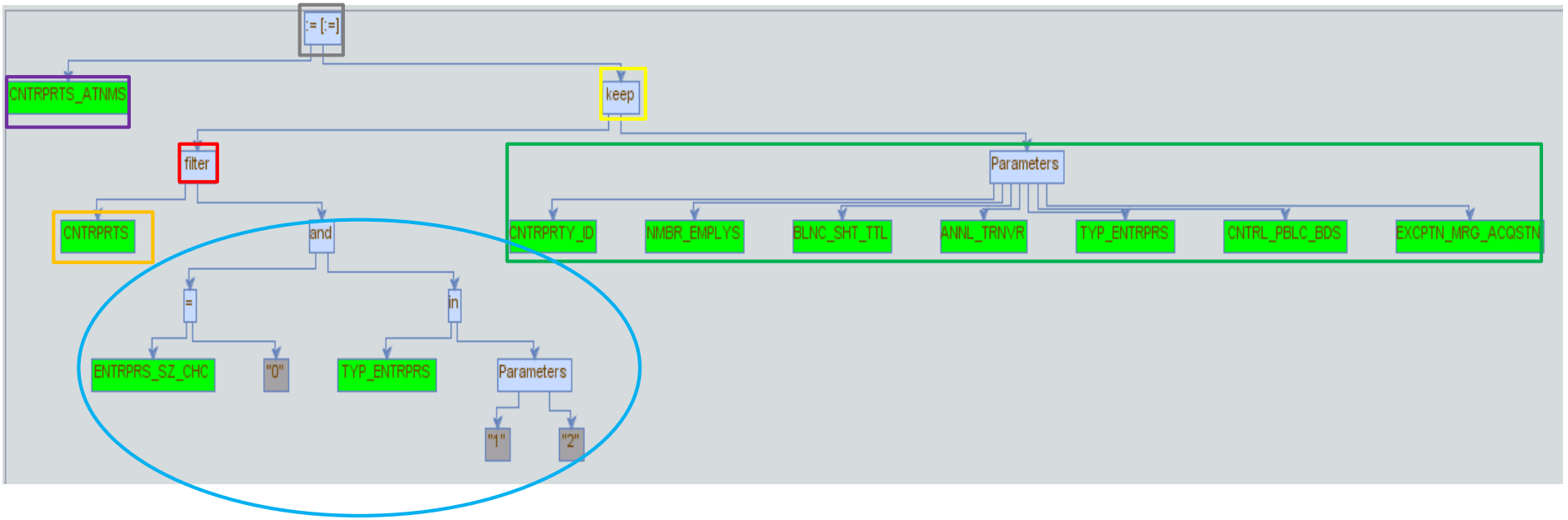
VTL univocal representation in BIRD

```
CNTRPRTS_ATNMS := CNTRPRTS
    filter
(ENTRPRS_SZ_CHC = "0" and TYP_ENTRPRS in ("1", "2")),
    keep
(CNTRPRTY_ID, NMBR_EMPLYS, BLNC_SHT_TTL, ANNL_TRNVR,
  TYP_ENTRPRS, CNTRL_PBLC_BDS, EXCPTN_MRG_ACQSTN)];
```



"tree structure" of the expression

VTL univocal representation in BIRD

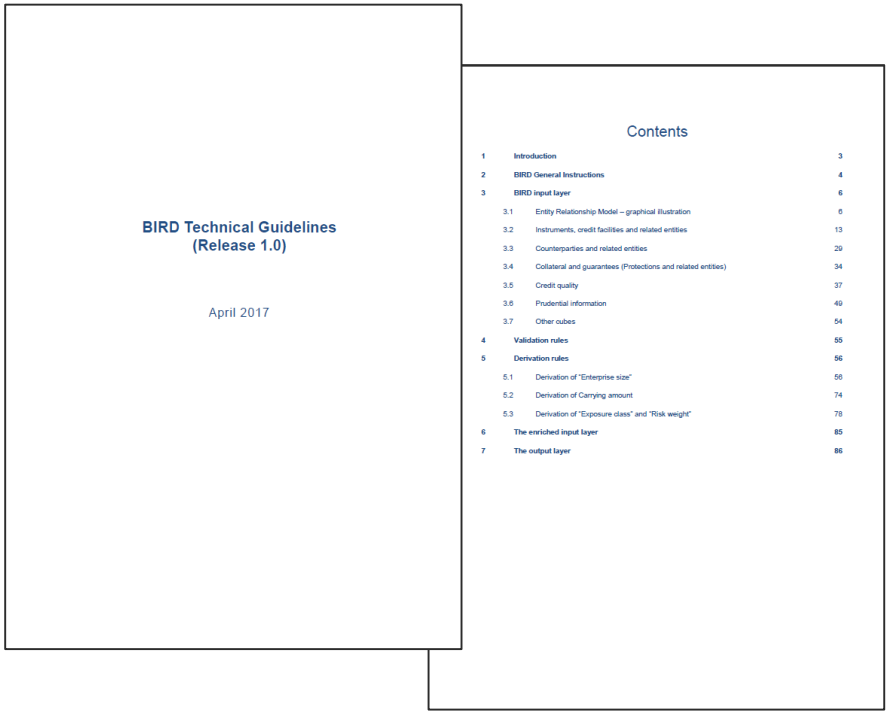


For example SQL:

```
CREATE VIEW CNTRPRTS_ATNMS AS
SELECT (CNTRPRTY_ID, NMBR_EMPLYS, BLNC_SHT_TTL, ANNL_TRNVR,
        TYP_ENTRPRS, CNTRL_PBLC_BDS, EXCPTN_MRG_ACQSTN)
        FROM CNTRPRTS
WHERE (ENTRPRS_SZ_CHC = "0" and TYP_ENTRPRS in ("1", "2"));
```

Technical guidelines

- Document that contains additional instructions and explains the business meaning of the logical description of the BIRD input layer



BIRD Technical Guidelines
(Release 1.0)

April 2017

Contents

State of play

Current activities:

- The BIRD group has developed AnaCredit and SHS extension
- The BIRD documentation is on a public website http://banks-integrated-reporting-dictionary.eu

Next Steps:

- Integration of FinRep reporting into BIRD
- Definition of a formal governance of the BIRD
- Workshop with different stakeholder (software house, consultants)

Thank you for your attention!

Questions