



**Joint and Open REsearch Programmes:
features and potentialities of the JOREP database**

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**PRESENTATION OF THE
TECHNICAL STRUCTURE OF JOREP**
Andrea Orazio Spinello

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Contents

- Joint R&D programmes as a 'multilevel entity'
- Programmes, funding agencies and countries
- Description of the 'bridge structure' of JOREP
- Information on substantive contents of the dataset
- Data-type of the variables and main characteristics



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What JOREP contains / 1



- JOREP dataset includes **97 programmes**
 - 44 are European initiatives;
 - 53 are bilateral programmes.
- JOREP project, started in 2010, defined a **set of descriptors characterising the joint R&D programmes** and the **organisations** leading different processes into the programmes.

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What JOREP contains / 2



- Features of programmes are referred to **2009**, while **funding data are available from 2000**.
- Most of the descriptors are either **numeric** or in the form of a **closed list** with predefined categories.
- Free text *remarks* have been used to highlight exceptions and cases, which do not easily fit into the categories.

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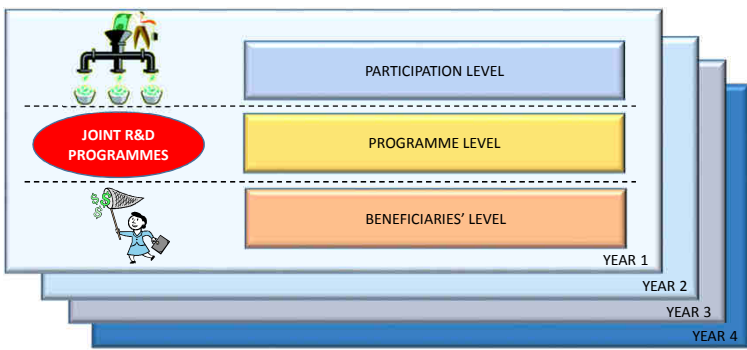
JOREP: a multilevel view to the joint R&D programmes

- The design of JOREP dataset is based on the nature of the main unit of analysis: **joint R&D programmes**.
- A joint R&D programme is a **multilevel entity**.
- Programmes can **change over time**: they can undergo specific transformations, potentially each year.






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Joint R&D programmes: the main unit of analysis



- Internal changes within the programme along the years
- Participation and allocation dynamics might change



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Joint R&D programmes, countries and funding agencies

- Panel data are stored – for each year – linking all the programmes to the **countries** participating/beneficiating and to **funding agencies involved**.

TYPES OF PARTICIPATION


<p>A country participates with a National funding agency, financing / not financing the programme</p>	<p>A country participates with a supranational funding agency, financing/not financing the programme</p>	<p>A country participates without a National funding agency, financing / not financing the programme</p>
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The 'Country' table

- The 'Country list' contains a simple list of countries (with their ISO country code).
- The geographical coverage of JOEP database includes only countries involved in the JOEP perimeter.
- Countries both as **source of funding** and **location of performers**.



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The 'Funding agencies list'

- In JOREP a 'funding agencies list' contains a list of **186** formal organizations that manage functions for joint R&D programmes.
- **Background information for the analysis**

Funding agencies	Funding agency ID Country Acronym Name in official language Name of the agency in English Status of the agency Agency website Total budget 2009 Geographical level Agency classification Agency domain
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Funding agencies ID will be re-designed in a new format according to the harmonization of research infrastructures developed within RISIS project.








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A relational model for a complex structure



- System for data management which integrates and allows **several level of analysis**.
- Due to the **multilevel structure** of the joint R&D programmes and considering the need to handle **panel descriptors**, data have been stored into distinct manageable tables within a **relational structure**

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The pillars of JOREP



- **Five parent tables**, divided in:
 - two tables containing the **units of analysis** including
 - data about joint R&D programmes;
 - descriptors of the funding agencies;
 - three **auxiliary sets** containing
 - a list of countries *source of funding for/beneficiary of* the programmes;
 - a list of reference years, as a support for panel data collection;
 - an auxiliary list of currencies

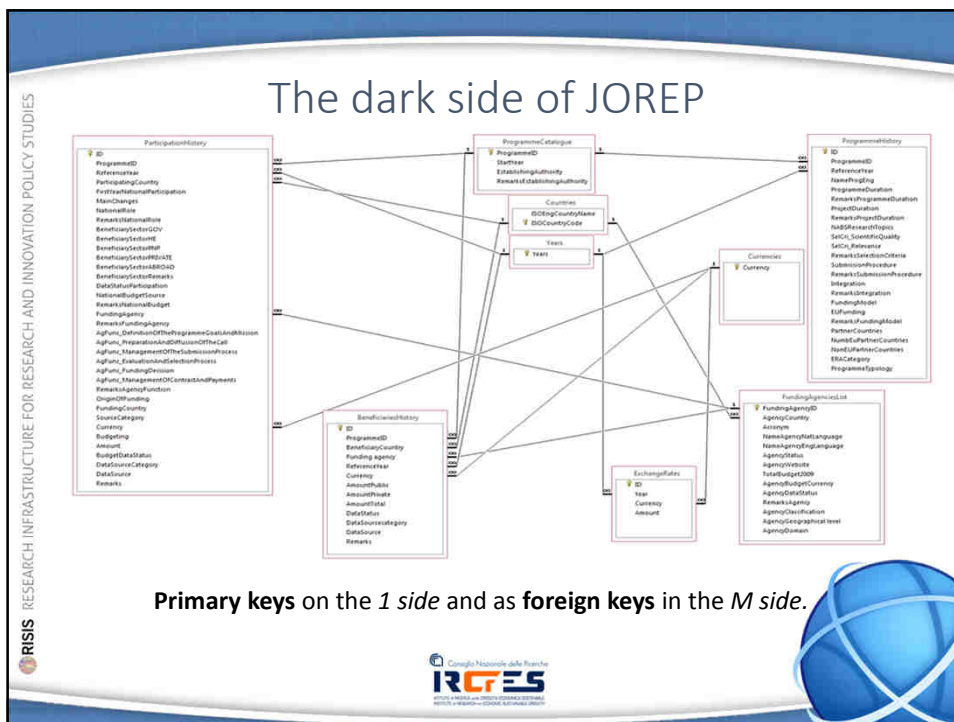
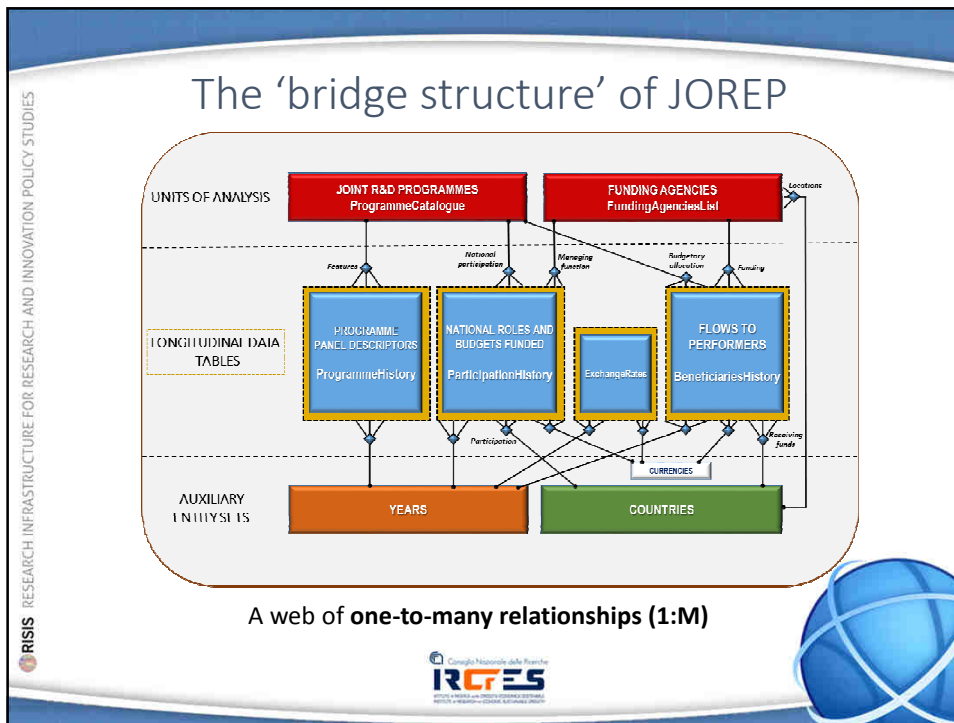



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The bricks of JOREP

- **Four child-longitudinal data tables**:
 - **three junction-archives**
 - the internal characteristics of programmes;
 - the National participations in term of role and allocated budget;
 - the funding received by the beneficiaries of the programme
 - a **support panel archive** containing exchange rates



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Datasheet view of the 'Programme catalogue'

- The table contains a primary key that uniquely identify each joint R&D programme as a single object.
- It provides a minimal set of attributes focused on the *basic* and *constant* information

Programme	StartYear	Establishing	RemarksEstablishin	Fare clic per aggiungere
PEU014	2006	EC		
PEU015	2009	EC		
PEU016	2005	EC		
PEU017	2004	EC		
PEU018	2009	EC		
PEU019	2007	EC		
PEU020	2006	EC		
PEU021	2006	EC		
PEU022	2006	EC		
PEU023	2005	EC		
PEU024	2009	EC		
PEU025	2004	EC		
PEU026	2008	EC		
PEU027	2007	EC		
PEU028	2009	EC		
PEU029	2004	EC		
PEU030	2009	EC		
PEU031	2006	EC		
PEU032	2009	EC		
PEU033	2008	EC	Intergovernmental Ini	
PEU034	2008	EC	Intergovernmental Ini	

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The 'Programme Catalogue' and its child tables

- Each record in the *ProgrammeCatalogue* is linked with functionally dependent rows of longitudinal data tables, named *ProgrammeHistory*, *ParticipationHistory*, *BeneficiariesHistory*.

```

    graph TD
      PC[ProgrammeCatalogue  
PROGRAMME ID  
Stationary descriptors] -- "1:M  
primary key" --- PH[ProgrammeHistory  
ID  
PROGRAMME ID  
REFERENCE YEAR  
Variable descriptors]
      PC -- "1:M  
foreign key" --- BH[BeneficiariesHistory  
ID  
PROGRAMME ID  
REFERENCE YEAR  
COUNTRY  
FUNDING AGENCY]
      PC -- "1:M  
foreign key" --- P[ParticipationHistory  
ID  
PROGRAMME ID  
REFERENCE YEAR  
COUNTRY  
FUNDING AGENCY]
      PH -- "1:M  
foreign key" --- Y1[Years  
YEAR]
      BH -- "1:M  
foreign key" --- Y2[Years  
YEAR]
      BH -- "1:M  
foreign key" --- C[Countries  
COUNTRY]
      BH -- "1:M  
foreign key" --- FA[FundingAgenciesList  
FUNDING AGENCY  
Funding agencies descriptors]
      P -- "1:M  
foreign key" --- Y3[Years  
YEAR]
      P -- "1:M  
foreign key" --- C2[Countries  
COUNTRY]
      P -- "1:M  
foreign key" --- FA2[FundingAgenciesList  
FUNDING AGENCY  
Funding agencies descriptors]
  
```

ParticipationHistory and BeneficiariesHistory are linked also with the 'Funding agencies list'




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Programme history

- The table about programme history contains only **descriptors at the level of the programme**, referred to 2009.
- Although now it contains only 2009 data, the table will keep track of the characteristics of joint R&D programmes in its by-year evolution.

Descriptor	Level	Type	
Programme start year	Programme-level	Stationary	PARENT TABLE
Establishing authority	Programme-level	Stationary	
Name of the programme	Programme-level	Variable	LONGITUDINAL TABLE
Programme duration	Programme-level	Variable	
Project duration	Programme-level	Variable	
Research topics	Programme-level	Variable	
Selection criteria	Programme-level	Variable	
Submission procedure	Programme-level	Variable	
Funding model	Programme-level	Variable	
EU contribution	Programme-level	Variable	
Partner countries	Programme-level	Variable	
Mode of integration	Programme-level	Variable	
ERA category	Programme-level	Variable	
Programme type	Programme-level	Variable	




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Datasheet view of Programme History

- Datasheet of programme history displays a table's content in a row-and-column format similar to an **Excel worksheet** without transformations or filtering.

ID	Programme	ReferenceY	NameProgrE	Programme	ProjectDura	NABSResea	SciCri_Scier	SciCri_Rele	Submission	Integration	FundingMor	EU Funding
10	PEU010	2009	ERASME2	Limited	2-4 years	6 Industrial pr	2	3	Single entry-p	Coordination	National pot	n
11	PEU011	2009	ERA-SPOT	Limited	2-4 years	6 Industrial pr	3	2	Parallel submi	Coordination	National pot	n
12	PEU012	2009	ERASysBio	Limited	2-4 years	13 General adv	3	2	Single entry-p	Coordination	National pot	n
13	PEU013	2009	ERASysBio+	Limited	2-4 years	13 General adv	3	2	Single entry-p	Coordination	National pot	y
14	PEU014	2009	EULANEST	Limited	2-4 years	Not applicable	4	1	Single entry-p	Coordination	National pot	n
15	PEU015	2009	EuroNanoMed	Limited	2-4 years	7 Health	3	2	Single entry-p	Coordination	National pot	n
16	PEU016	2009	EUROPOLAR	Limited	2-4 years	1 Exploration	4	1	Single entry-p	Coordination	National pot	n



- Each record of **ProgrammeHistory** keeps track of the characteristics of joint programmes that identify the organizational features of the programme.

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Descriptors at the level of the programme / 1



- **Programme duration.** (*Limited/Periodic/Regular*)
- **Project duration.** (*Typical duration of projects funded*).
- **Research topics.** *The classification refers to the socio-economic objective of the programme, not to the actual research content.*
- **Selection criteria** This descriptor provides synthetic information on the importance of the two following criteria in the selection of projects:
 - Scientific quality.
 - Relevance to strategic or economic priorities.
- **Submission procedure.** (*Single entry point/Parallel submission*)

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Descriptors at the level of the programme / 2

- **Funding model.** (*Common pot/Common pot with return rules/National pot/Mixed-mode*).
- **EU contribution.** (*yes/no*).
- **Partner countries**
- **Mode of integration.** (*Agency, coordination, delegation, independent selection*).
- **ERA category.** This descriptor provides a general categorization of joint programmes in terms of their relationships with the European research area
- **Programme type.** The main organizational settings of joint programmes and is based on a set of other descriptions.






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National participation to the programme

- *ParticipationHistory* collects data on the national participation of JOREP countries to the joint R&D programmes from the catalogue for each reference year.

Descriptor	Level
Reference year	Participation-level
Participating country	Participation-level
Year of first country participation	Participation-level
National role	Participation-level
Potential beneficiary sectors	Participation-level
Funding agency	Participation-level
Agency functions	Participation-level
Funding source	Participation-level
Source category	Participation-level
Currency	Participation-level
Budgeting	Participation-level
Amount	Participation-level
Data source category	Participation-level
Data source	Participation-level






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Datasheet view of Participation History

- The yearly dynamic of participation points out the **national funding agency** executing at least one of the programme function, including also the **budget allocated to the programme** by the National Agency or by the only Country.

ID	Programme	Reference year	Participation	First year	National role	Funding agency	Remarks	Fur	AgFunc_Del	AgFunc_Pre	AgFunc_Ma	AgFunc_Eva	AgFunc_Fun	AgFunc_Ma	OrigInOff	
181	PEU009	2007	ES	2007	Full participati	ES-06 - ISCIII			Participation	Participation	Participation	Participation	Participation	Participation	yes	Spanish Nator
183	PEU009	2009	ES	2007	Full participati	ES-06 - ISCIII			Participation	Participation	Participation	Participation	Participation	Participation	yes	Spanish Nator
184	PEU009	2009	ES	2007	Full participati	ES-06 - ISCIII			Participation	Participation	Participation	Participation	Participation	Participation	yes	Spanish Nator
185	PEU009	2006	ES	2007	Full participati	ES-99			Participation	Participation	Participation	Participation	Participation	Participation	yes	Not applicable
186	PEU009	2006	European leve	Not applicable	Not applicable	EN-09 - Consor	Organisation	h	yes	yes	yes	yes	no	no	no	European Com
187	PEU009	2007	European leve	Not applicable	Not applicable	EN-09 - Consor	Organisation	h	yes	yes	yes	yes	no	no	no	European Com
188	PEU009	2008	European leve	Not applicable	Not applicable	EN-09 - Consor	Organisation	h	yes	yes	yes	yes	no	no	no	European Com
189	PEU009	2009	European leve	Not applicable	Not applicable	EN-09 - Consor	Organisation	h	yes	yes	yes	yes	no	no	no	European Com
190	PEU009	2006	FR	2006	Full participati	FR-01 - ANR			Participation	Participation	Participation	Participation	Participation	Participation	yes	FR-13 - MESR
191	PEU009	2007	FR	2006	Full participati	FR-01 - ANR			Participation	Participation	Participation	Participation	Participation	Participation	yes	FR-13 - MESR
192	PEU009	2008	FR	2006	Full participati	FR-01 - ANR			Participation	Participation	Participation	Participation	Participation	Participation	yes	FR-13 - MESR
193	PEU009	2009	FR	2006	Full participati	FR-01 - ANR			Participation	Participation	Participation	Participation	Participation	Participation	yes	FR-13 - MESR
194	PEU009	2007	IT	2006	Full participati	IT-04 - MOH	The ISS - IT-06	l	Participation	Participation	Participation	Participation	Participation	Participation	no	Ministry of He
195	PEU009	2008	IT	2006	Full participati	IT-04 - MOH	The ISS - IT-06	l	Participation	Participation	Participation	Participation	Participation	Participation	no	Ministry of He
196	PEU009	2009	IT	2006	Full participati	IT-04 - MOH	The ISS - IT-06	l	Participation	Participation	Participation	Participation	Participation	Participation	no	Ministry of He
197	PEU009	2006	NL	2009	Full participati	NL-05 - ZonMa	According to c	i	Participation	Participation	Participation	Participation	Participation	Participation	yes	NL-17 - VWS
198	PEU009	2007	NL	2009	Full participati	NL-05 - ZonMa	According to c	i	Participation	Participation	Participation	Participation	Participation	Participation	yes	NL-17 - VWS
199	PEU009	2008	NL	2009	Full participati	NL-05 - ZonMa	According to c	i	Participation	Participation	Participation	Participation	Participation	Participation	yes	NL-17 - VWS
200	PEU009	2009	NL	2009	Full participati	NL-05 - ZonMa	According to c	i	Participation	Participation	Participation	Participation	Participation	Participation	yes	NL-17 - VWS

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Descriptors at the participation level / 1

- **National role.** (*Full participation / Full participation with restricted funding / Limited participation*)
- **Potential beneficiary sectors.** This descriptor identifies the performing sectors that are legally entitled to get funding from the programme.
- **Funding agency.** The funding agency receiving the funding amount specifically for this programme.
- **Agency functions** For each agency, indication is requested if it manages at least one of following functions:
 - Definition of the programme goals and mission.
 - Preparation and diffusion of the call.
 - Management of the submission process.
 - Evaluation and selection process.
 - Decision on which projects to fund.
 - Management of contract and payments.








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Descriptors at the participation level / 2

- **Origin of funding.** The exact origin of the budget, including the European Union budget, the national budgets and regional budgets.
- **Funding country.** The national state (or EU) from where funding originates
- **Budgeting.** The type of budgeting conforming to the following categories:
 - Specific budget line
 - Earmarked budget
 - Delegated budget
- **Amount.** The funding for the whole year expressed in currency units.







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Programme beneficiaries

- Each country can beneficiate of a budget for many programmes, through funding agencies and budget received by a national agency may change by year.
- Thus, beneficiaries' history stores a data collection of the **budget transferred from each funding agencies to the performers.**

Descriptor	Level
Reference Year	Beneficiary-level
Beneficiary Country	Beneficiary-level
Funding Agency	Beneficiary-level
Currency	Beneficiary-level
Amount	Beneficiary-level
Data source category	Beneficiary-level
Data source	Beneficiary-level






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Datasheet view of Beneficiaries' History

- In the beneficiaries' history table data are collected by year for the countries of the performing organization and disaggregated by funding agency managing resources for the programme.



ID	Programme	Beneficiary	Funding age	Reference	Currency	AmountPub	AmountPriv	AmountTot	DataStatus	DataSource	DataSource
199	PEU006	DE	EN-06 - Consor	2009	EUR	0	0	0	Available	Other source	Programme w
200	PEU006	FR	EN-06 - Consor	2008	EUR	0	0	0	Available	Other source	Programme w
201	PEU006	FR	EN-06 - Consor	2009	EUR	0	0	0	Available	Other source	Programme w
202	PEU006	IT	EN-06 - Consor	2008	EUR	0	0	0	Available	Other source	Programme w
203	PEU006	IT	EN-06 - Consor	2009	EUR	0	0	0	Available	Other source	Programme w
204	PEU006	NL	EN-06 - Consor	2008	EUR	0	0	0	Available	Other source	Programme w
205	PEU006	NL	EN-06 - Consor	2009	EUR	0	0	0	Available	Other source	Programme w
206	PEU006	UK	EN-06 - Consor	2008	EUR	0	0	0	Available	Other source	Programme w
207	PEU006	UK	EN-06 - Consor	2009	EUR	0	0	0	Available	Other source	Programme w
208	PEU006	FR	FR-06 - ANSES	2008	EUR	0	0	0	Available	Information fr	Contact with ti
209	PEU006	FR	FR-06 - ANSES	2009	EUR	119.392	0	119.392	Available	Information fr	Contact with ti
210	PEU006	NL	NL-14 - RIVM	2008	EUR	0	0	0	Available	Information fr	Tom van Teun
211	PEU006	NL	NL-14 - RIVM	2009	EUR	0	0	0	Available	Information fr	Tom van Teun
212	PEU006	UK	UK-06 - NERC	2008	Not applicable	0	0	0	Available	Not applicable	Not applicable
213	PEU006	UK	UK-06 - NERC	2009	GBP	1.000.000	0	1.000.000	Available	Information fr	NERC grants d
214	PEU007	DE	DE-07a - PTJ	2006	EUR	0	0	0	Available	Information fr	PTJ
215	PEU007	DE	DE-07a - PTJ	2007	EUR	0	0	0	Available	Information fr	PTJ

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Descriptors at the beneficiaries' level

- **Beneficiary country.** Country the funding amount refers to.
- **Funding agency.** The name of the funding agency the funding originates from.
- **Currency.** The national currency used. Standard ISO currency codes is used.
- **Amount.** For each year, the volume of funding transferred to public and private beneficiaries.






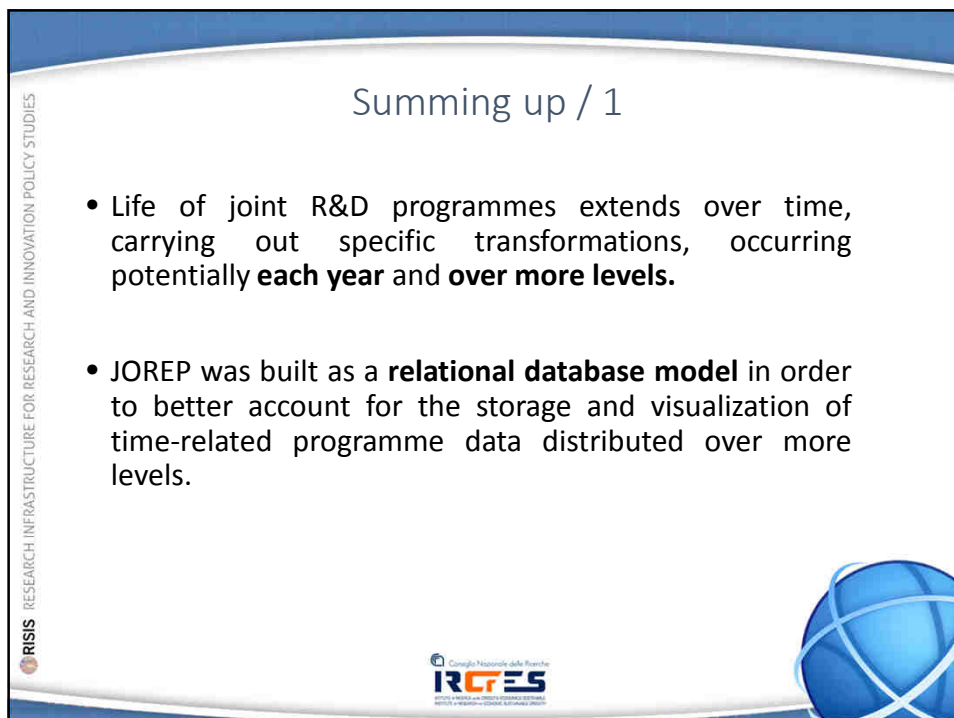
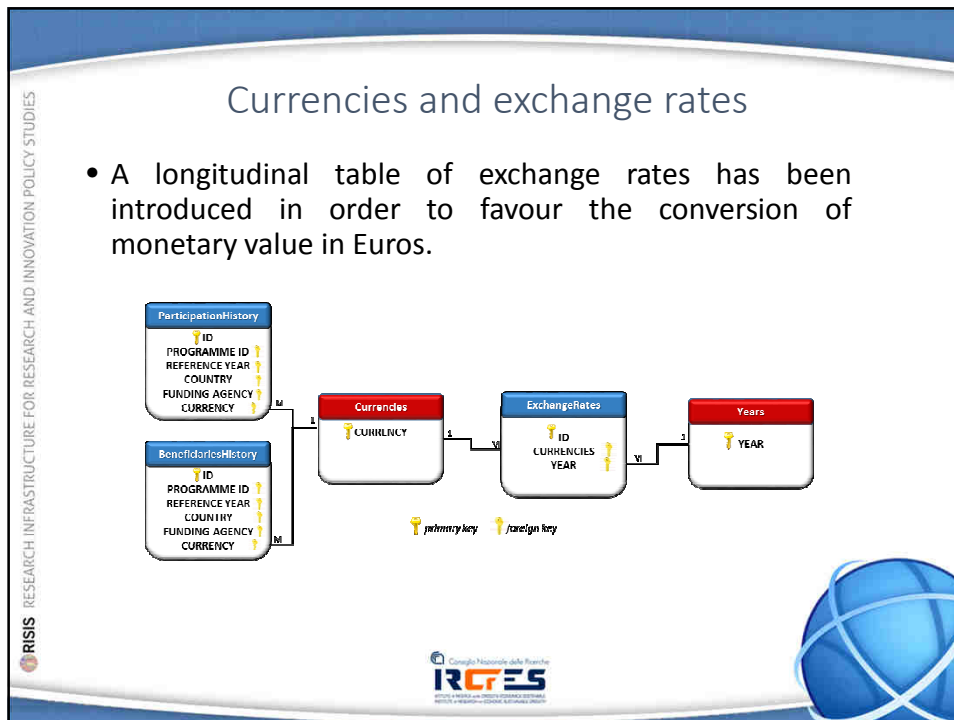
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Overview on data-type of JOREP descriptors

DIMENSION	VARIABLES	LEVEL	DATA TYPE
Joint R&D Programme	Programme ID	Programme-level	Code
	Name of the programme	Programme-level	Short text
	Programme start year	Programme-level	Closed list
	Establishing authority	Programme-level	Short text
	Programme duration	Programme-level	Closed list
	Project duration	Programme-level	Closed list
	Research topics	Programme-level	Closed list
	Selection criteria	Programme-level	Scale (Numeric)
	Submission procedure	Programme-level	Binary
	Funding model	Programme-level	Closed list
	EU contribution	Programme-level	Binary
	Partner countries	Programme-level	Short list
	Mode of integration	Programme-level	Closed list
	ERA category	Programme-level	Closed list
	Programme type	Programme-level	Closed list
	Reference year	Participation-level	Closed list
	Participating country	Participation-level	Closed list
	Year first country participation	Participation-level	Closed list
	National role	Participation-level	Closed list
	Potential beneficiary sectors	Participation-level	Closed list
	National budget source	Participation-level	Short text
	Funding agency	Participation-level	Code
	Agency functions	Participation-level	Closed list
	Funding source	Participation-level	Short text
	Source category	Participation-level	Closed list
	Currency	Participation-level	Short text
	Budgeting	Participation-level	Short text
	Amount	Participation-level	Numeric
	Data source category	Participation-level	Short text
	Budget data source	Participation-level	Short text
	Reference year	Beneficiary-level	Closed list
	Beneficiary Country	Beneficiary-level	Closed list
	Funding Agency	Beneficiary-level	Closed list
Currency	Beneficiary-level	Short text	
Amount	Beneficiary-level	Numeric	
Data source category	Beneficiary-level	Short text	
Data source	Beneficiary-level	Short text	

- Most of descriptors in JOREP are in the form of a **closed list** with predefined categories.
- **Numeric data** are also present in order to follow the funding flows



Summing up / 2

- Therefore, the sets of data refer to **panel descriptors**, placed at the same **level of the programme** as well as concerning attributes placed at **participation level** and at **beneficiaries' level**.
- JOREP contains both **qualitative and quantitative descriptors**. The combination of these descriptors characterise the organizational forms of joint R&D programmes, the models of integration, the networks of collaboration; identify the flows of funding... and so on.

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