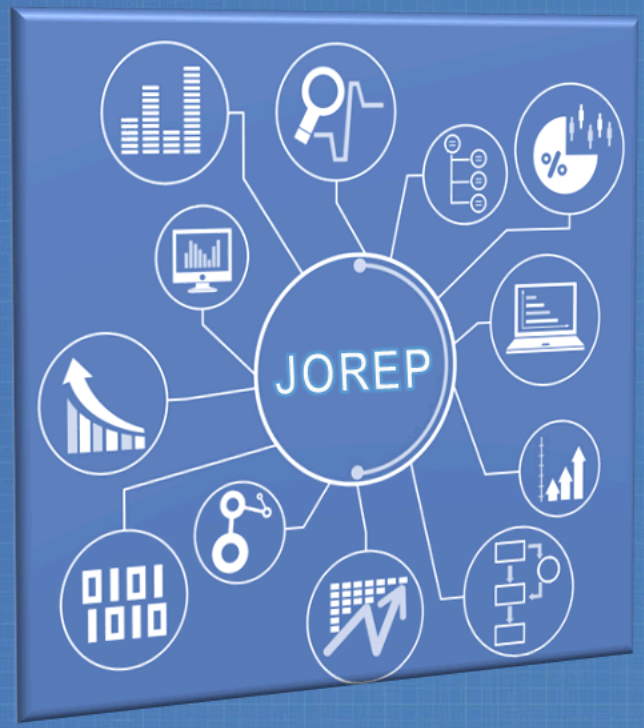

Joint and Open REsearch Programmes: features and potentialities of the JOREP database

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Databases on Joint Programming: the opportunities of JOREP

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Contents

- ERA and the goal of integration
- Conceptual framework
- Typology of joint programmes
- Examples of exploitation
- Maintaining JOREP alive
- Summing up

ERA and the goal of integration

- ERA concept focuses on integration
  - Transferring competences and budget to the European level
- Instruments toward integration
  - OMC - policy layer
  - NoE - national research policies
  - EUSFRI - research infrastructures
  - Joint programmes - funding layer

A long path toward integration

- 50's and 60's — Critical mass (energy, space)
- 70' — Networking and supranational agencies (COST/ESF/Eureka)
- 00's — Cooperation in national research funding (ERA-NET/art. 185 EU Treaty/JTI)

- *Member States should better align national research programmes in order to implement commonly agreed strategic research agendas in the context of joint programming. They should also improve interoperability between national programmes in order to facilitate further cross border research cooperation*. (ERA Progress Report, 2013)

Theoretical approaches

- Kuhlmann (2001) co-evolution of "political systems" and "innovation systems" in Europe - three scenarios
  - increasingly centralised and dominating European innovation policy arena (*probably fails*)
  - progressive decentralisation and open competition between partly strengthened, partly weakened national or regional innovation systems (*more probable*)
  - centrally "mediated" mixture of competition and co-operation between diverse regional innovation cultures and a related governance structure (*some degree of probability*)
- Multi-actors multi-layered nature of the European governance (Edler and Kuhlmann, 2011)

Theoretical approaches

- Coordination modes in public project funding: national agents moving within specific interaction spaces of the national research systems: project-based, mixed, and vertically integrated modes (Lepori, 2011)

- European dynamics are shaped by the interaction between research spaces and disciplinary spaces: “global research field” and ”localized research spaces” (Nedeva, 2012)

- Countries differ as to the way in which the functions of orientation, programming and research are distributed among national actors (one organization in charge of different functions or delegating functions from one organization to another, Barré et al., 2012)

ERA and the goal of integration

- Transnational research activities are still underdeveloped,
  - barriers are linked to legal/organizational factors and to research capacity (Optimat, 2005)

- Little evidences of policy convergence
  - Weak tendency of different countries to grow more alike by developing integrated policy instruments for trans-national research (Knill, 2005).

- Different strategies toward policy coordination based on the level of shift of competences and autonomy from one policy level to another one (ministry or agency, Edler 2010)
  - integration - complete shift, new policy entity
  - coordination – "the various elements are still autonomous, they do not strive to be merged into one new entity, and they still engage in their individual activities"
  - collaboration – no shift

Joint programming

- ERA countries are free
  - To initiate Joint programmes with other countries
  - To decide whether to participate in existing joint programmes
  - How much budget to allocate to them

- Different patterns of transnational research according to:
  - The size (large countries vs small countries based on the population, the intensity of the GDP per capita and the R&D investment)
  - The presence of specialized actors for certain type of program funding (e.g. research councils or innovation agencies)
  - A national specialization in given research fields/themes
  - Symbolic, signaling motivations

Building a conceptual framework

- Research funding systems are based on
  - four layers representing functions in research funding (policy, agencies, umbrella organizations, beneficiaries)
  - two main allocation modes, institutional and project funding
- Project funding is characterized by:
  - the organizational separation between funding agency and beneficiary
  - funding is limited in time
  - resources are allocated directly to research groups instead of whole universities or research organizations.
- The main distinctive criterion is not competition

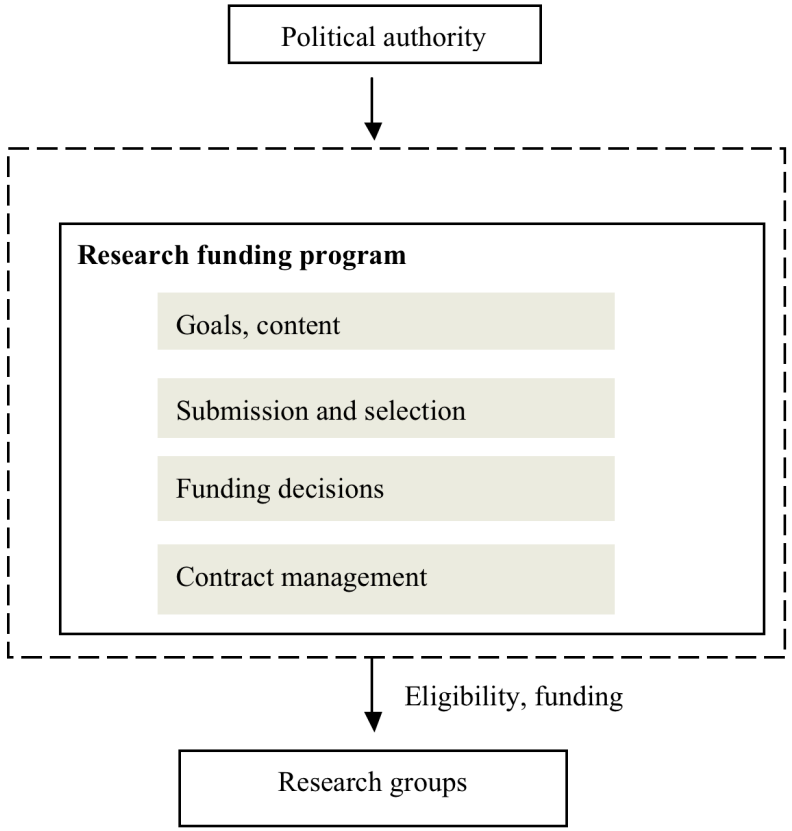
Programme not project

- Strategic intent (outward focus)
- Focus on politics, organizations and negotiations
- Broad scope
- Success criteria and long term impact
- Governance
- Monitoring environmental change as well as change in program
- Long in duration in time
- Benefits are achieved throughout duration of program

What is *not* a research funding programme

- Spot research contracts attributed for specific purposes and without a well-defined framework
- Grants or contracts attributed without an open call for proposal (call internal to one university or research organization is not open)
- Programmes without relationships with the policy layer – the political authority establishing their mission and providing the resources
- Programmes without relationships with the organizational layer, which are eligible for receiving funding

FIGURE 1. Research funding programmes



Organizational characteristics of joint programmes

- Functions that might be shared at the supranational level
  - Call
  - Submission
  - Evaluation and selection
  - Funding decision
  - Contract management.

- Modes of managing the functions
  - Creation of a supranational agency
  - Coordination through committees
  - Parallel processes
  - Delegation

- Options for funding management
  - Common pot
  - National pot (possibly with EU top-up funding)

Building a typology

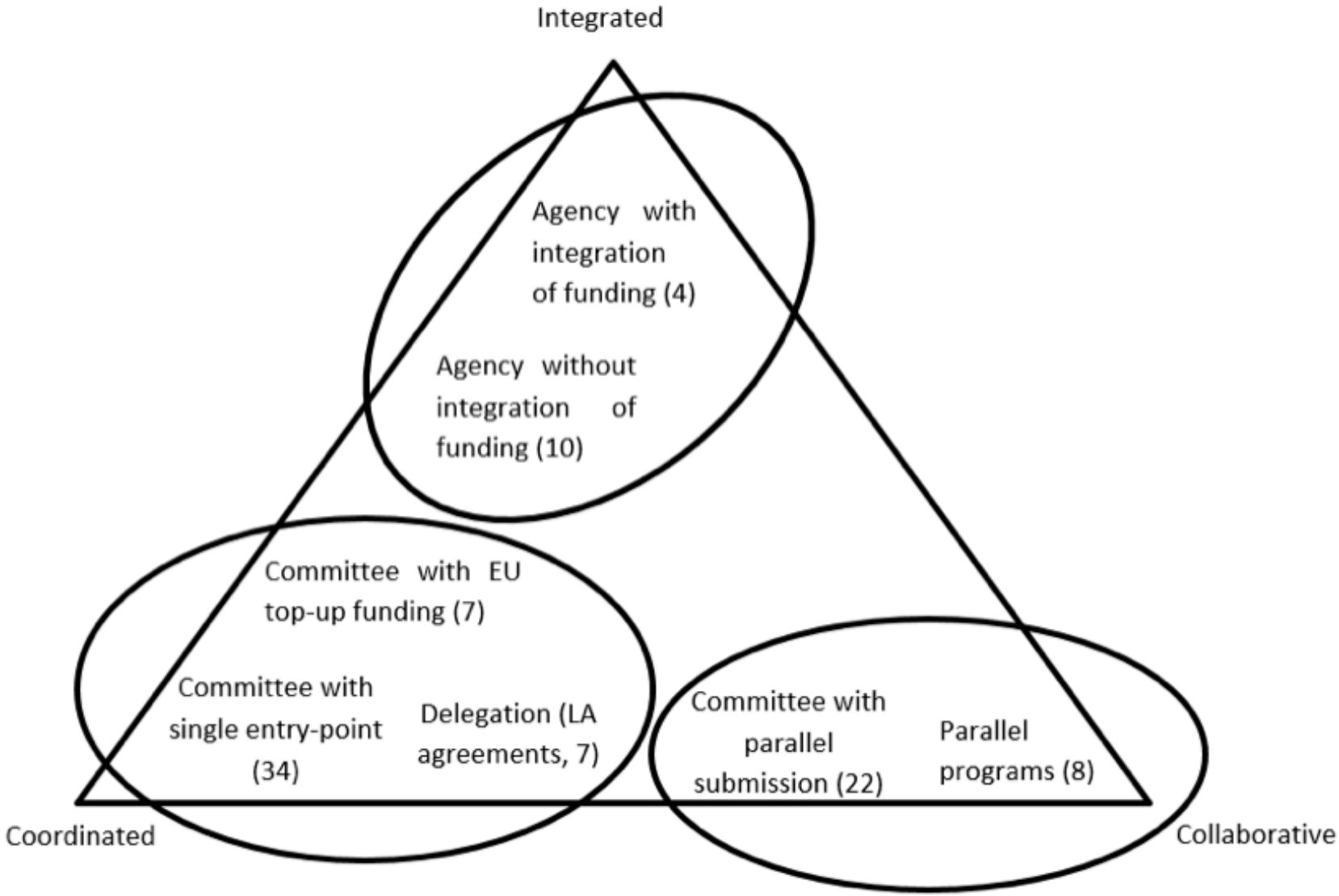
- Problem of typifying a complex and variable set of programmes
  - Selecting attributes that conceptualize the main characteristics of the programmes
- A typology was built based on
  - the integration of programmes' functions (mode of integration and submission procedures)
  - The integration of financial resources
- It allows to distinguish between
  - Integrate programs
  - Coordinate programs
  - Collaborative programs

Integration of programme functions

- Mode of integration
  - *Agency*= joint activities are managed by a supranational agency
  - *Coordination*= Joint activities are managed through non-permanent structures like joint committees, specifically created for the programme
  - *Delegation*= joint activities are delegated to a national agency of one of the participating country
  - *Independent selection*= joint activities are developed independently and the project is approved only if all the parties decide independently to fund it
- Submission procedure
  - *Single entry point*: submission to a single agency
  - *Parallel submission*: proposal have to be submitted at the same time to two or more agencies

Funding integration

- *Real common pot*
  - all financial resources from participating countries are put in a single pot and used for financing the selected projects, independently of the country
- *Real common pot with return rules*,
  - on the whole of the program some relationship is formally requested between national contributions and funding to national performers.
- *National pot*
  - financial resources for participating countries are managed separately and devoted to national performers
- *Mixed-mode*
  - i.e. virtual common put plus top-up contribution to support best ranked projects.
- *National pot with additional EU contribution* to the whole program.


Integrated
Agency with integration of funding (4)
Agency without integration of funding (10)
Committee with EU top-up funding (7)
Committee with single entry-point (34)
Delegation (LA agreements, 7)
Committee with parallel submission (22)
Parallel programs (8)
Coordinated
Collaborative

Role of the Funding Agencies

		Innovation agency	Private organization	Public research organization	Research council	Research ministry	Sector agency	Sector ministry
Program domain	Science	8	0	19	53	19	3	3
	Policy	11	5	17	33	12	11	24
	Industry	41	4	14	13	13	12	22

Association between domain and type of agency is significant ($p < 0.001$, chi-square test).

Program domain and agency participations are associated
- research councils in science-oriented programs
- sector agencies, and ministries in policy programs and
- innovation agencies

The selection of the agency is largely driven by the alignment between agency mission and program domain

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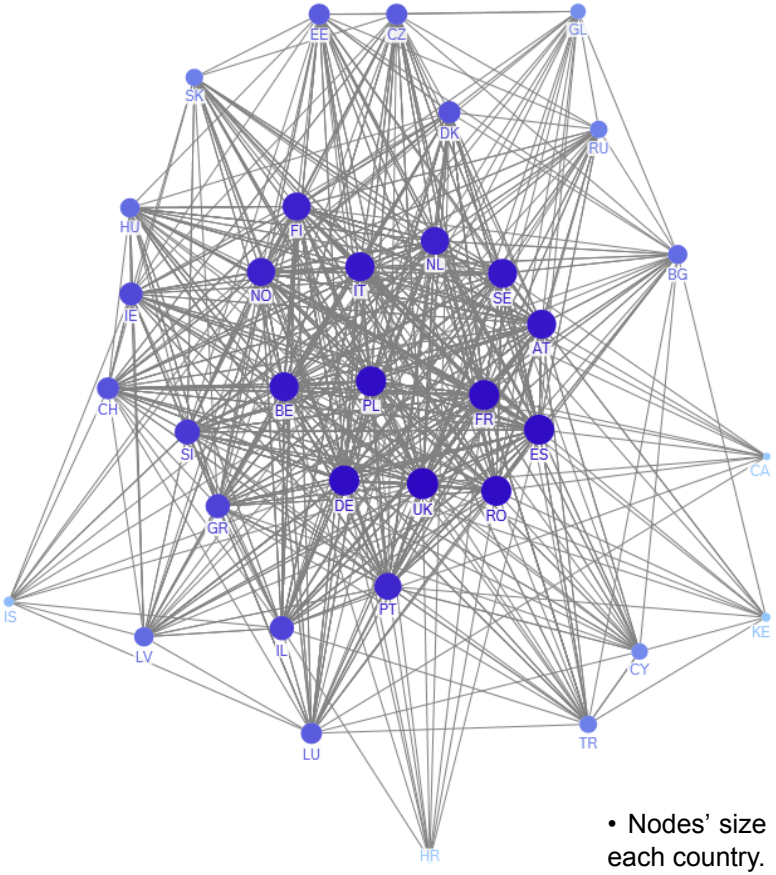
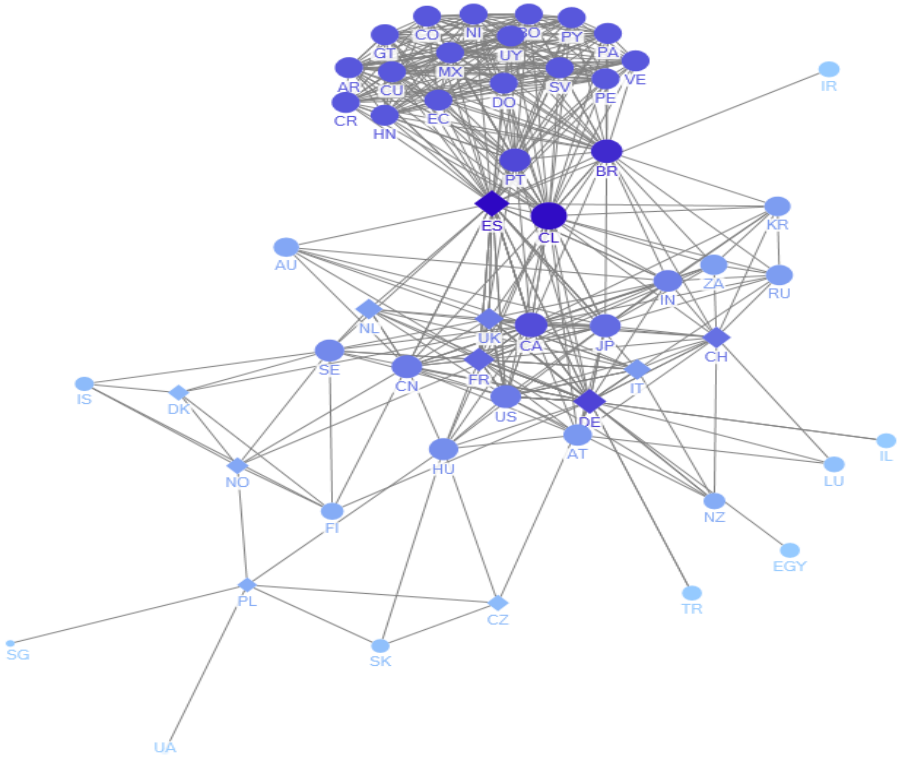
ERA-net programmes
Graph density 0.7478



Bilateral programmes
Graph density 0.2620



- Nodes' size shows the closeness centrality of each country.
- Color gradation shows the degree of each country.

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Network analysis results

- The main countries in **the ERA-net** programmes network according to their **centrality degree** are the United Kingdom (k=34), followed by Germany, France, Spain and Poland (k=33).

- The main countries **in the bilateral** programmes network according to their centrality degree are Spain (k=34) Germany (k=24), France (k=18).

- Spain and Germany are the countries with the **highest betweenness** in bilateral programmes (countries that attract more partners to the research programmes).

- Finally, the average **clustering coefficient** in the ERA-net (C=0.874) is higher than in the bilateral programmes (C=0.712), thus the countries in the ERA-net tend to cluster more than the other program.

Maintaining JOREP alive: what the database currently includes

- JOREP dataset includes 97 joint R&D programmes:
  - 44 are European initiatives;
    - 33 ERA-net/ERA-net+;
    - 4 Art. 185;
    - 2 JTI;
    - 2 ESF; EUREKA; COST; ESA
  - 53 are bilateral programmes.

- JOREP contains a set of descriptors characterising the joint R&D programmes and the organisations leading different processes into the programmes

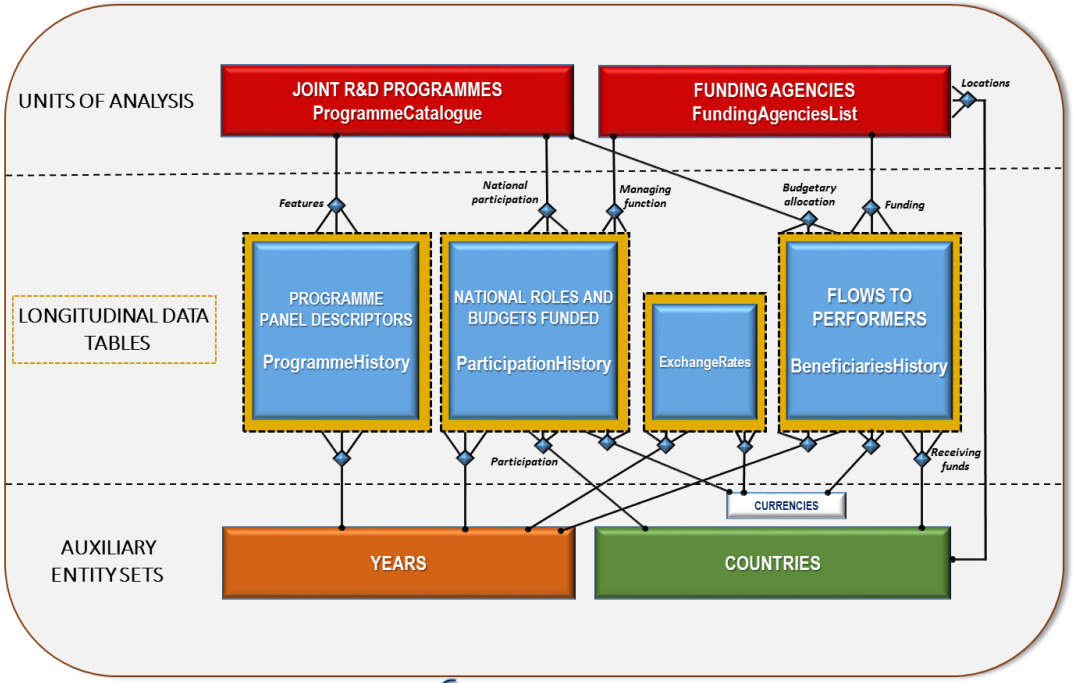
What JOREP will include

- At the end of the enlarging process, JOREP dataset will include a new set of joint R&D programmes :
  - 116 European initiatives* (+72);
    - 86 ERA-net/ERA-net+ (+53);
    - Up to 10 JPI (new objects in the dataset) (+10);
    - Up to 9 Art. 185 Initiatives (+5);
    - Up to 6 JTI (+4);
    - 2 ESF; EUREKA (testing possibility for unpacking actions); COST; ESA
  - 53 bilateral programmes already inserted plus a number of new bilateral programmes (updating?)
  - Enlarging country coverage (EU28-Associated)

*including 'successor programmes' which will be registered with the same code of the predecessor

Testing the new relational structure

- The inclusion of new programmes is revealing useful to test the new relational structure of JOREP created after the re-engineering process in WP06
- The rules established in WP06 report are implemented and controlled through new entries and the updating process



Feasibility controls

- The inclusion of new units in the dataset allows controls on
  - the solutions adopted to trace the demography of the programmes through the new fields
  - the possibility of disaggregating or unpacking data on large programmes to obtain more specific information
  - the current list of JOREP variables in order to limit data redundancy to the necessary for the integration of tables

Summing up

- Variable geometry of joint programmes
- Rapid evolution of the landscape
  - Changing of the characteristics of the programmes (hybrid logics of coordination-bridging the gap between integration and collaboration)
  - Changing role of the actors (Funding Agencies and government delegation, national trust favouring integration, national champions, etc.)
  - Competition and the concentration of the budget in few programmes

Summing up

- Eurostat data collection on joint programmes
  - Cases of exclusion are now included
  - JPIs and Horizon 2020 joint initiatives
  - From 44 to 116 European programmes in 4 years
  - Very different participation between Western and Eastern European countries
- Maintaining descriptors is crucial for policy analysis
- Integrating data on national project funding
  - The PREF approach
- Integrating bibliometric data on research outputs