The Research & Innovation Information Space, CRIS's and Research Portals

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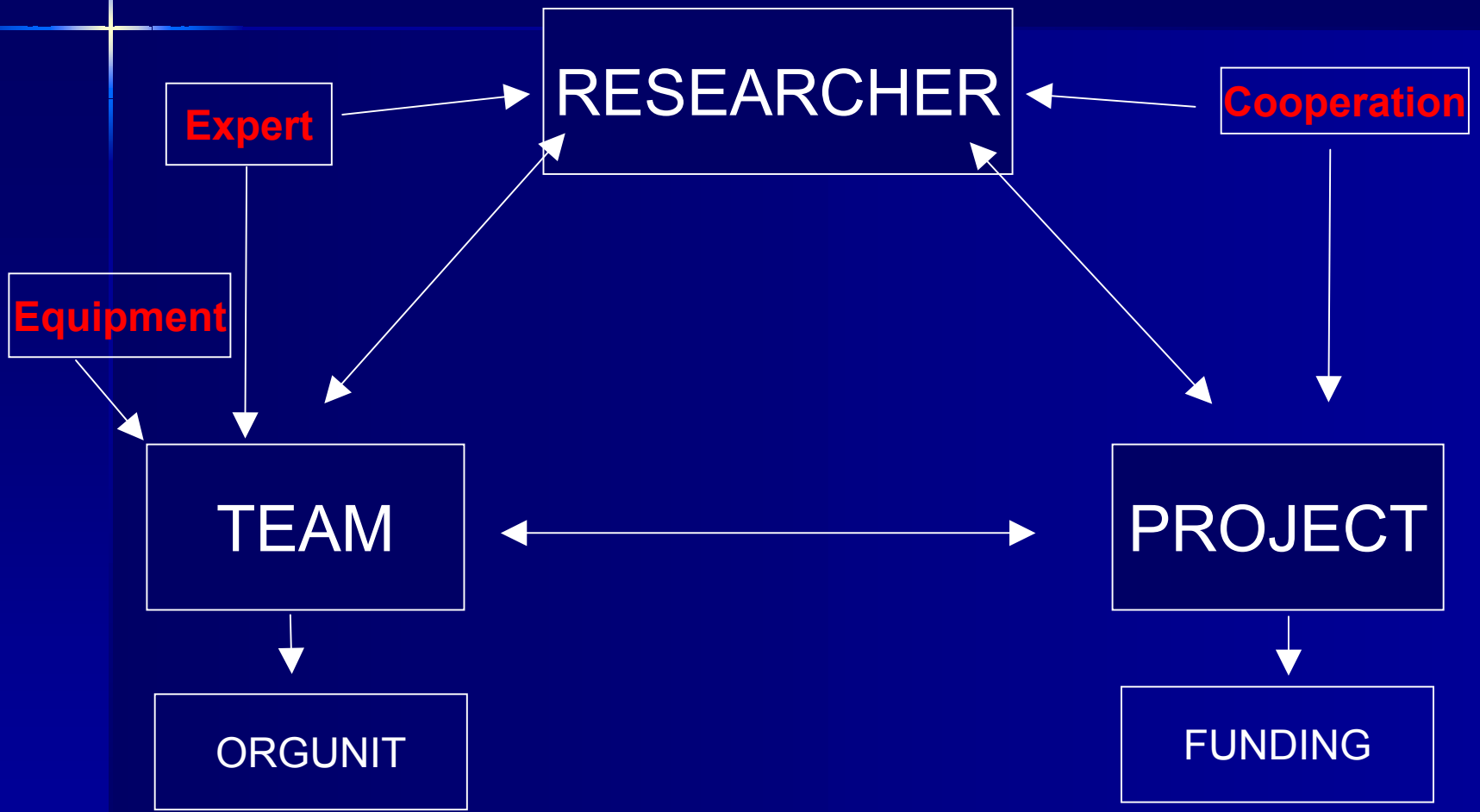
overview

- Case study: IWETO
  - History, problems, lessons learned
- Research and Innovation Information Space
- The Innovation Added Value Chain: a conceptual framework for research information
- Current Research Management System
- Conclusions

Objects & Relations



IWETO problems (1)

- Current information
  - Update frequency to low
  - No process synchronisation → aged data
- Completeness
  - \+ universities (and some older data from HEI's)
  - \- HEI, Research & Scientific institutes, Data Centres, -
  - \- Industry

IWETO problems (2)

- Quality
  - Datamodel incomplete and not adapted to the purpose
  - No Q-control process for quality of the content
- Classification & thesauri
  - Incomplete
  - Not updated
  - Low granularity
  - No standard thesaurus in use
  - No active management of thesauri in R&D domain

IWETO problems (3)

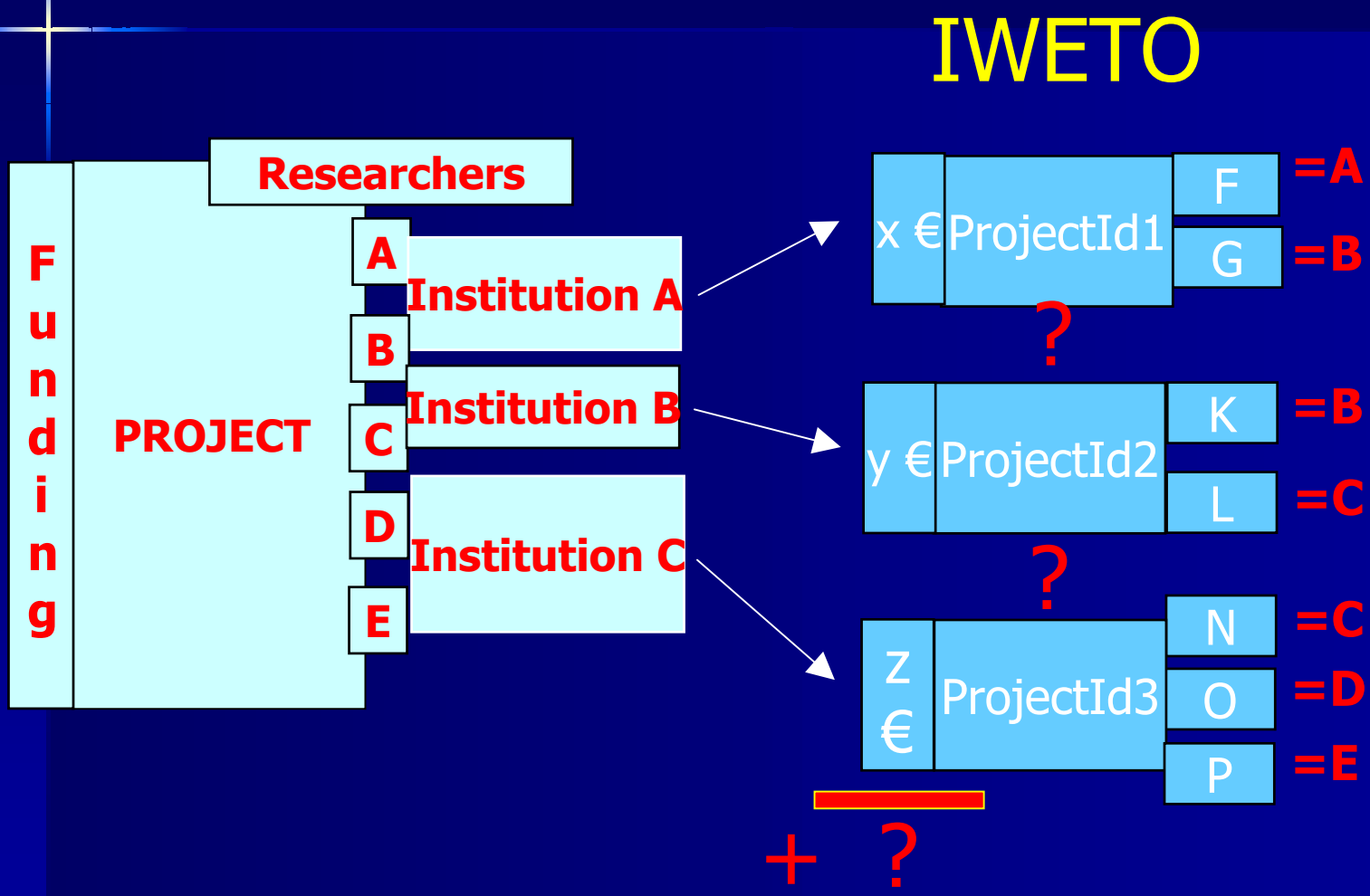
- Model
  - Coop is not a primary business object
  - Missing objects
    - Output: publications, patents, products, events
    - CV
    - Contact
  - Identification problems
    - Primary keys
      - Projects
      - Researchers
      - OrgUNits…

IWETO problems (4)

- Procedure
  - High administrative load (ministry and data suppliers)
  - Suppliers are secondary source
  - Collection process
    - Ex post
    - Outside the business processes
    - Q-control Feedback difficult to process
  - No update possibility

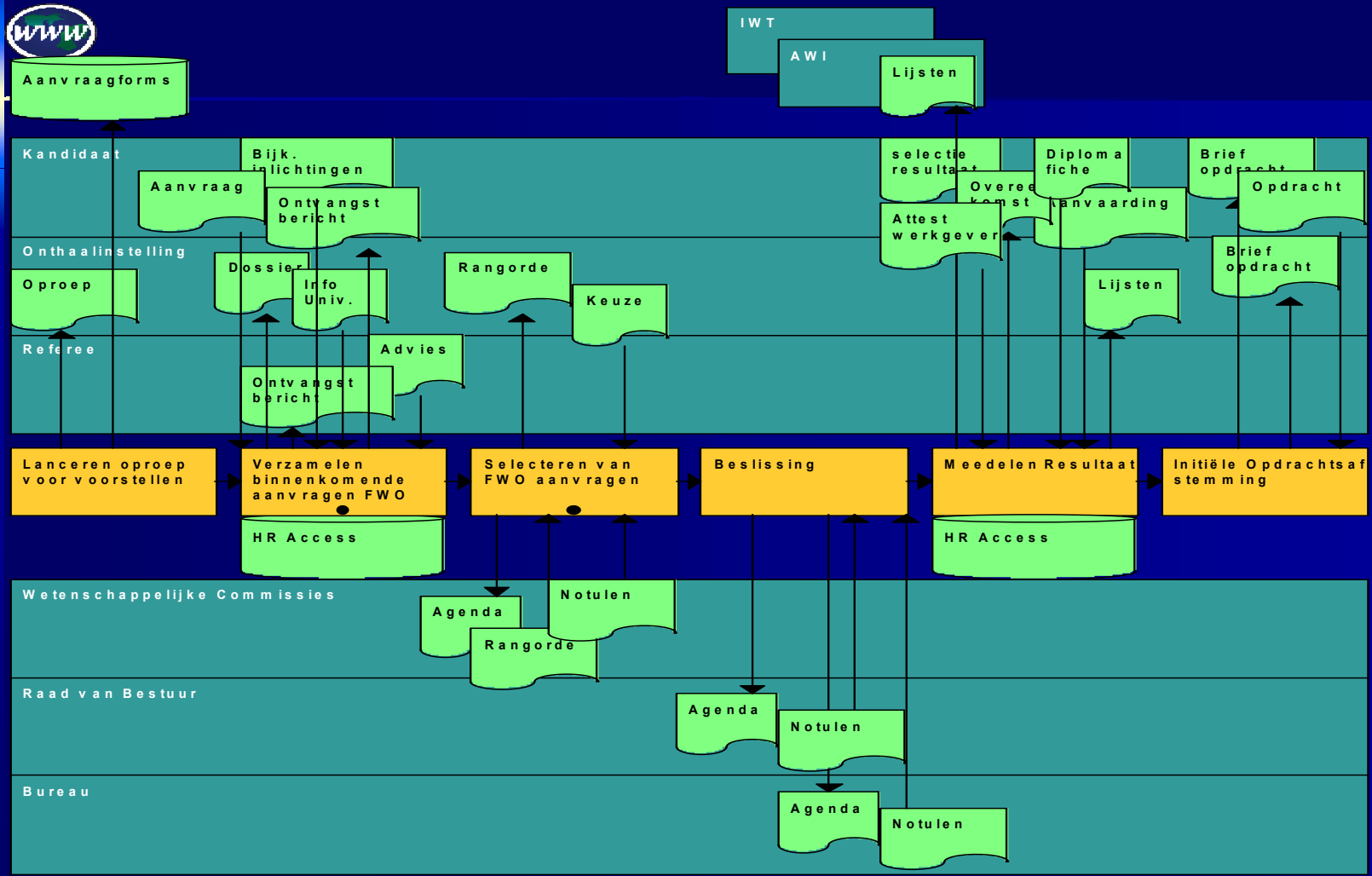
Information flow problems

Redundancy - ambiguïty

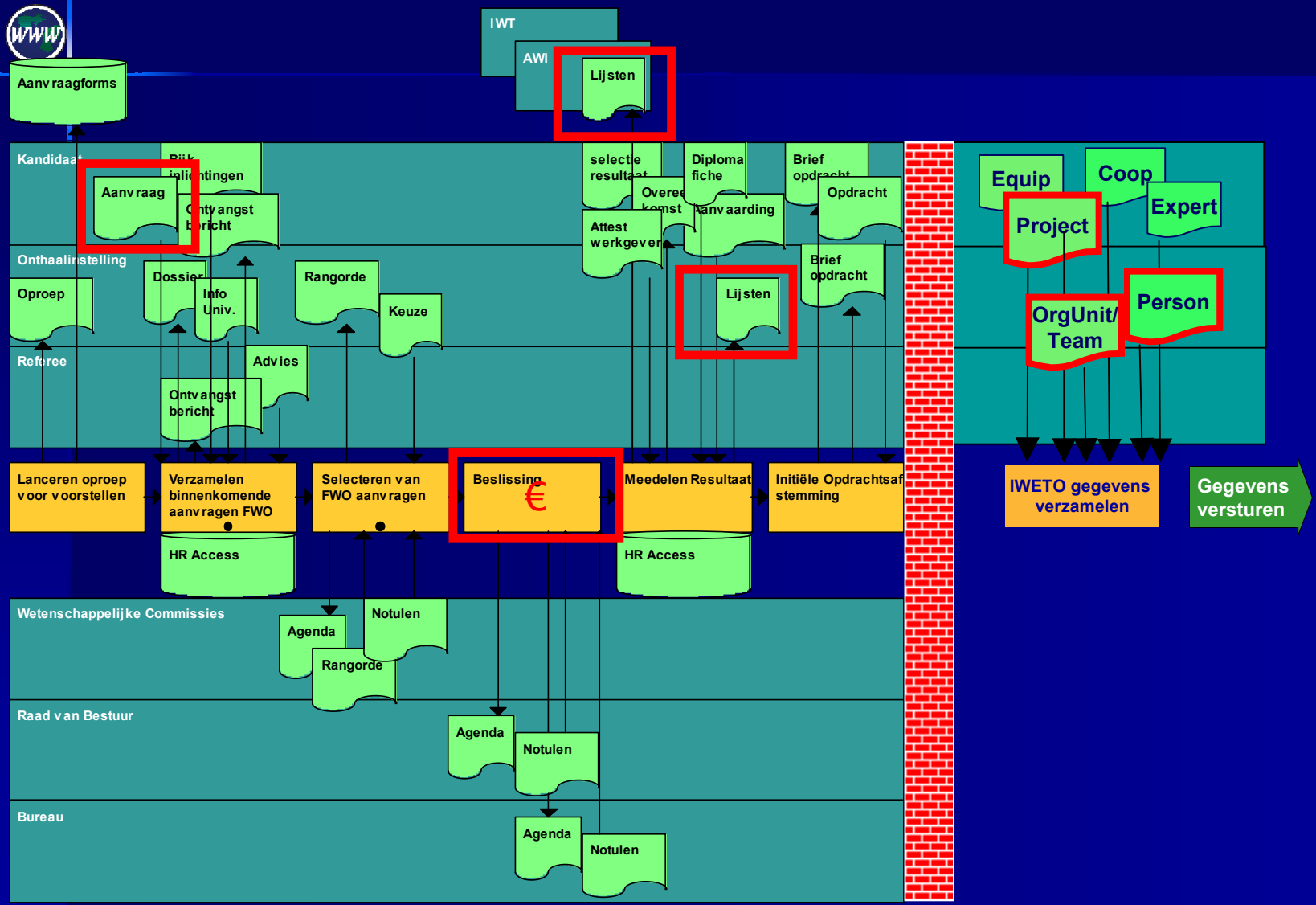


	FWO Mandates	FWO Research Project	FWO Research Teams	FWO Travel expenses	IWT Ph.D funding	IWT Research Projects
Researcher						
Name	X	X	X	X	X	X
Contact	X	X	X	X	X	X
Place of birth	X	X	X	X	X	X
Sex	X	X	X	X	X	X
Nationality	X	X	X	X	X	X
Civil status	X	X	X	X	X	X
Function		X	X	X		
OrgUnit	X	X	X	X	X	X
Diploma's	X	X		X	X	X
Publications	X	X	X	X	X	X
Rewards & Prices	X				X	X
Expertise	X				X	X
Scientific career	X	X			X	X
Projects						
Title	X	X	X	X	X	X
Abstract	X	X	X			X
Full text				X		
Classifications	X	X	X	X		X
Budget		X	X			X
References	X		X			X

FWO project funding process



IWETO-data in the processes

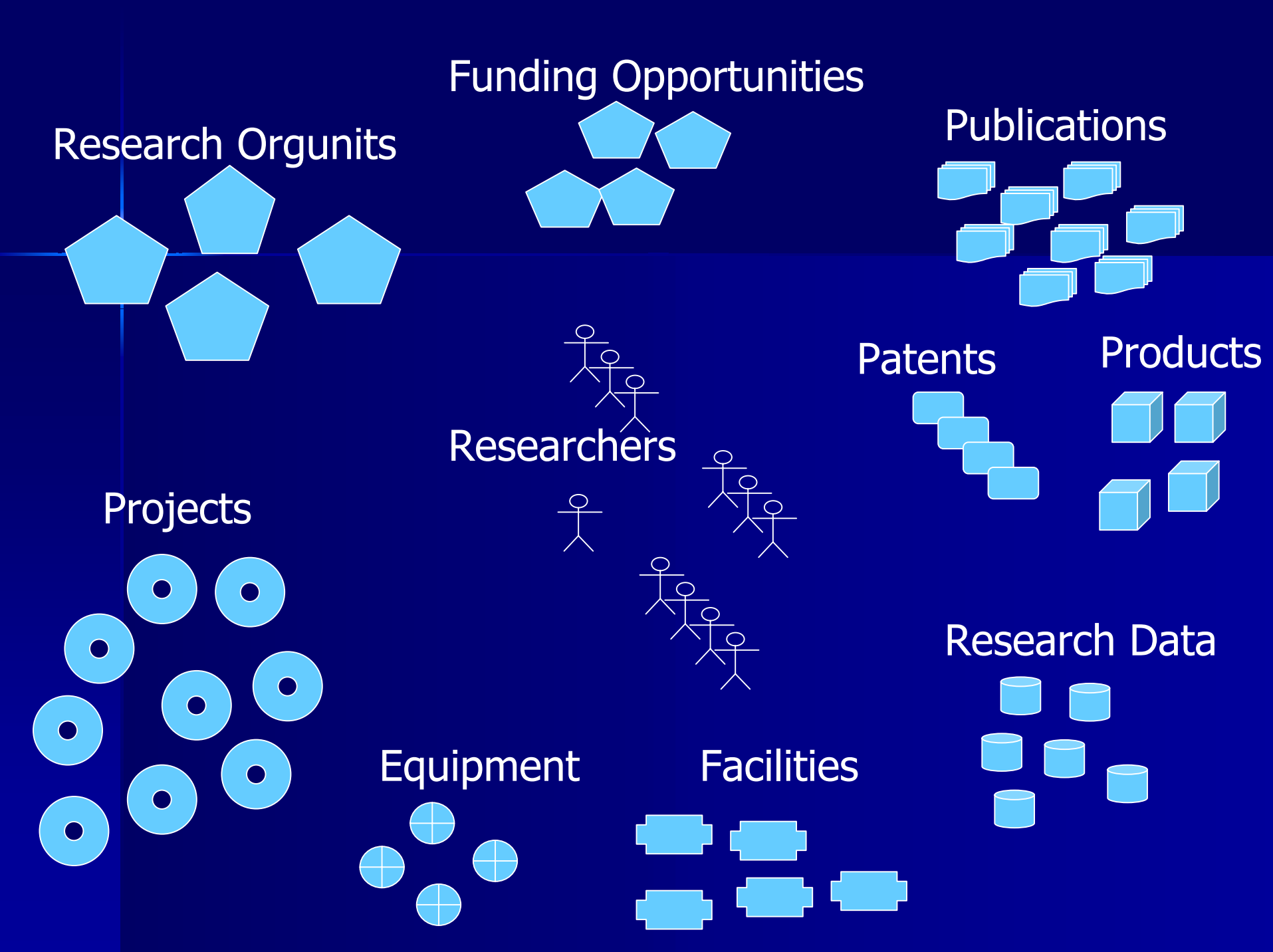


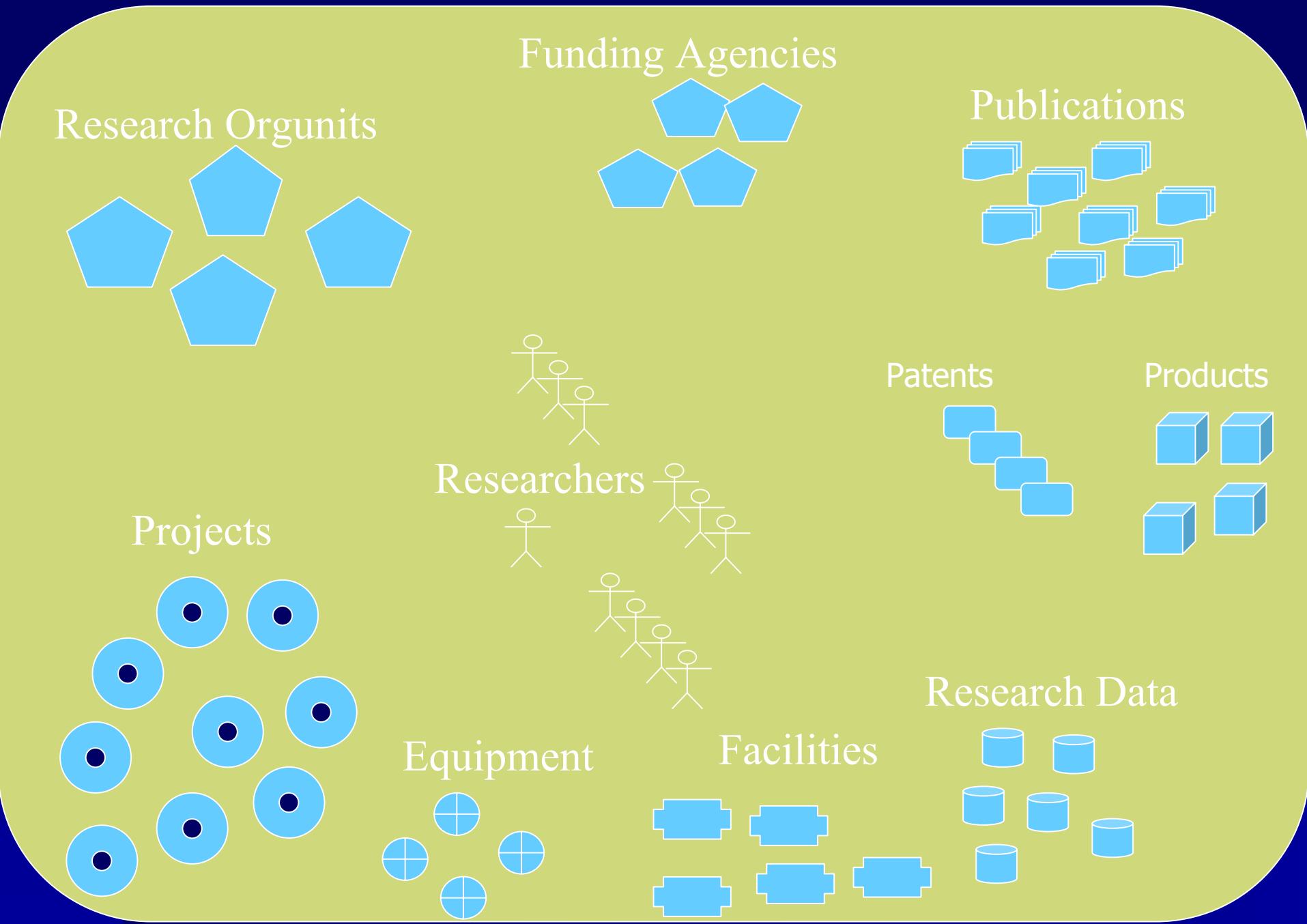
IWETO-information owner

	owner	IWETO source	Proces allignement
Persoon/CV	Researcher	Institution	No
OrgUnit/Team	Research Organisation	Institution	No
Project	▪Researcher ▪Institutions ▪Funder	Institution	No
Expertise	▪Researcher ▪Team	Institution	No
Equipment	▪Researcher ▪Team ▪Institution	Institution	No

Problems of information gathering

- Information gathering is a ex post process
  - Multiplication of effort
  - Multiplication of errors
  - Multiplication of information
  - "Not on time" delivery of information
- Lack of synchronisation between information and business
  - Information has documentary or anecdotic value
  - No relaible aggregations possible →no measures available


Funding Opportunities
Research Orgunits
Publications
Researchers
Patents
Products
Projects
Research Data
Equipment
Facilities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Research Orgunits
Publications
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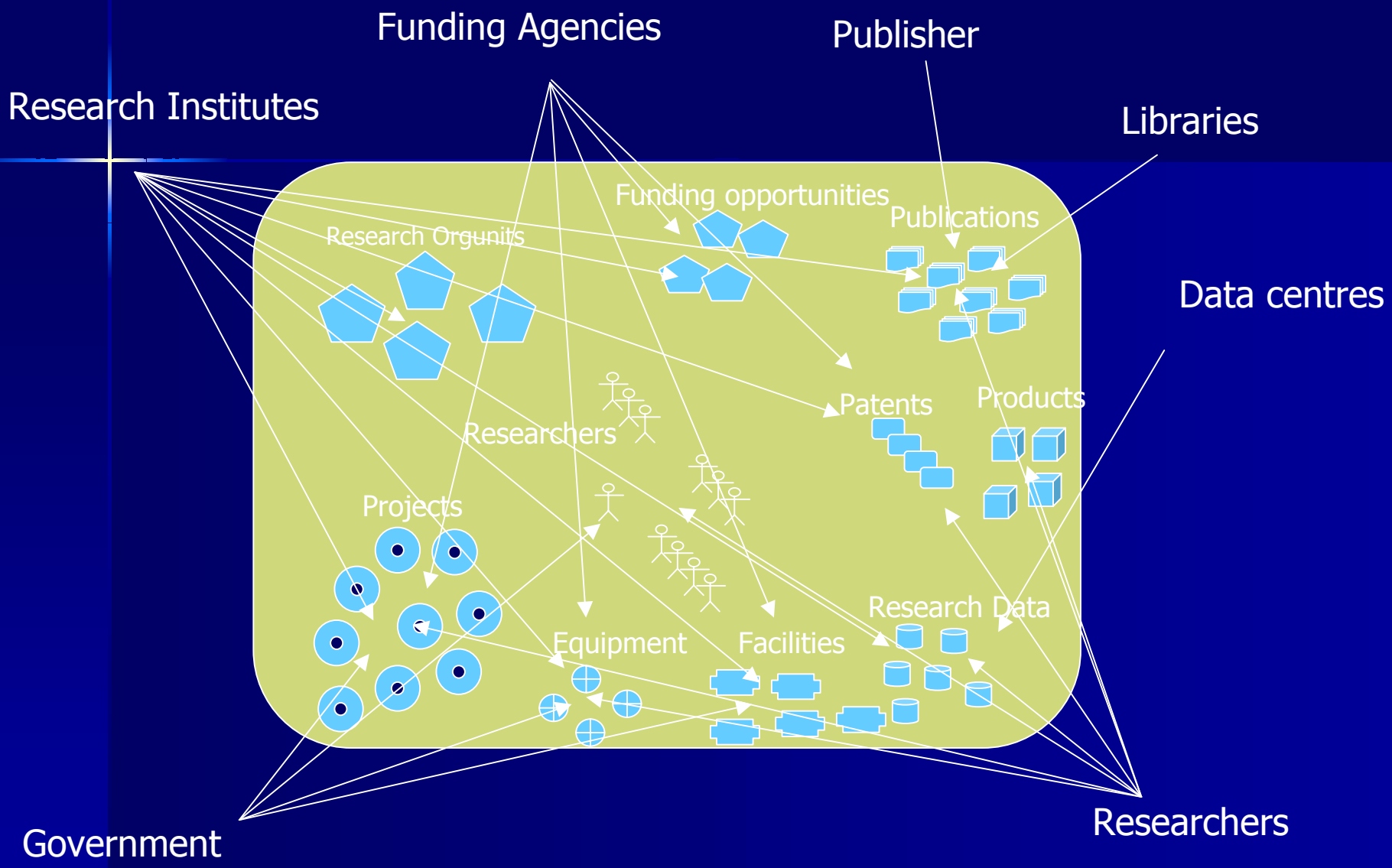
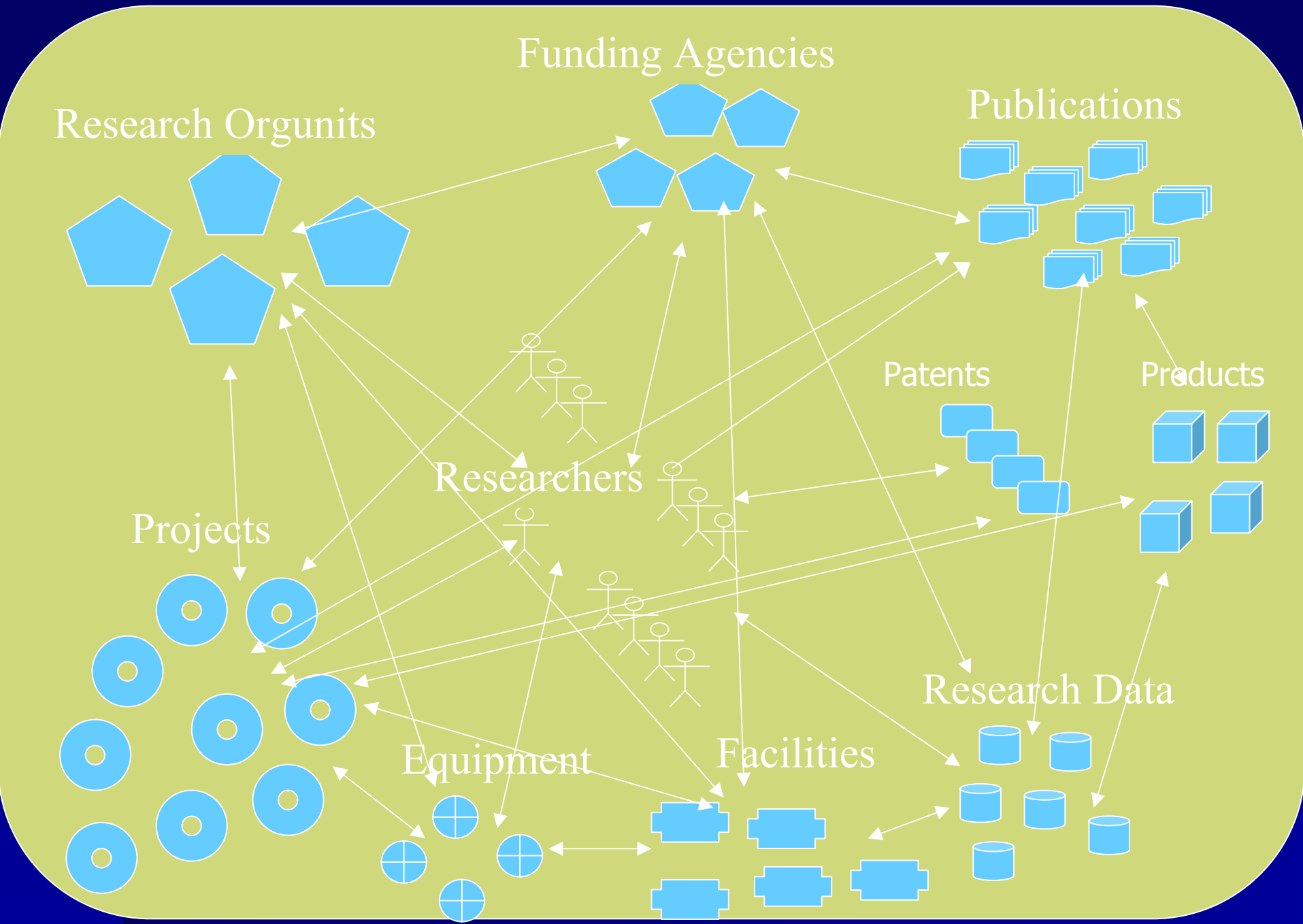
Ownership / Creators

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Research Orgunits
Publications
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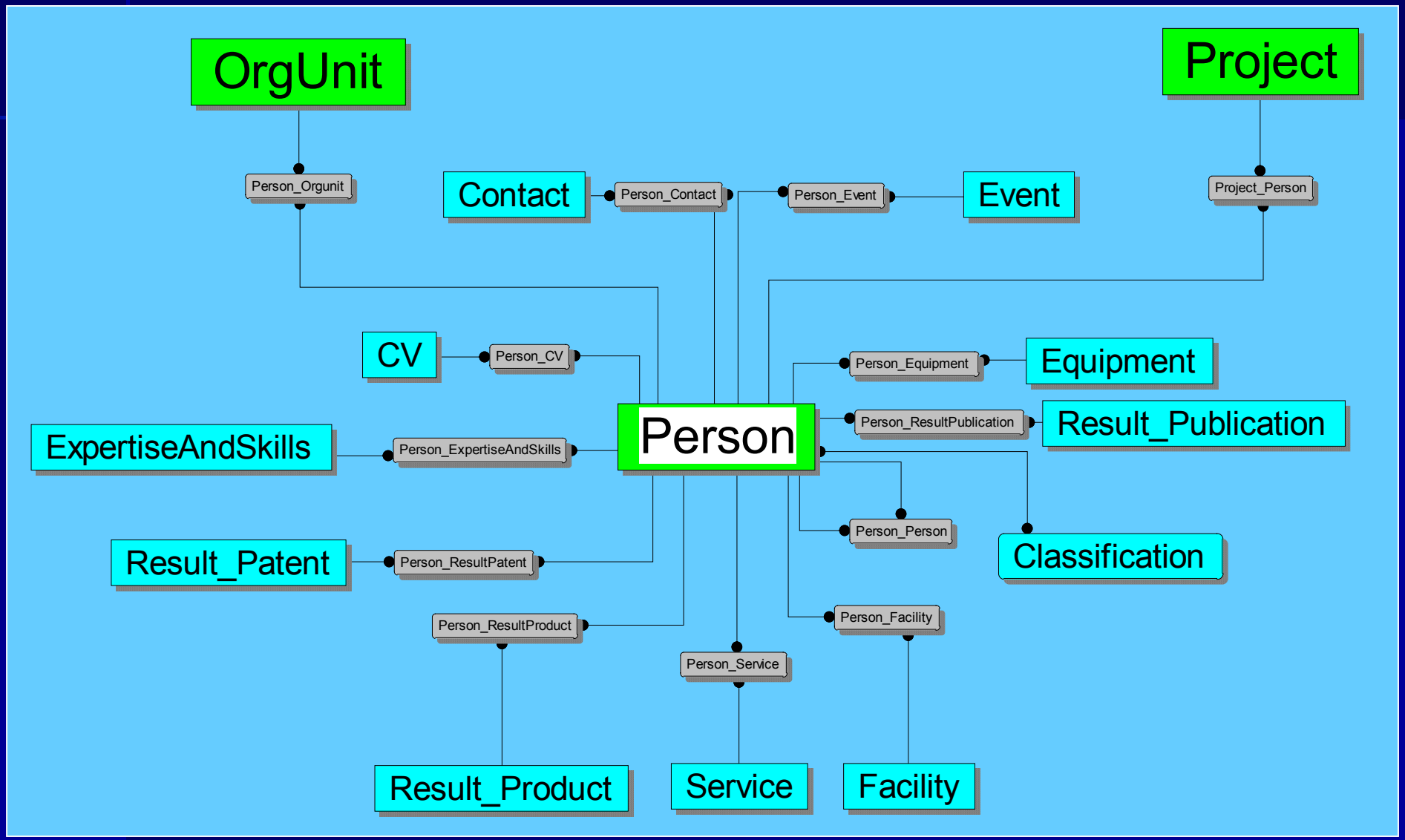
Equipment
Facilities

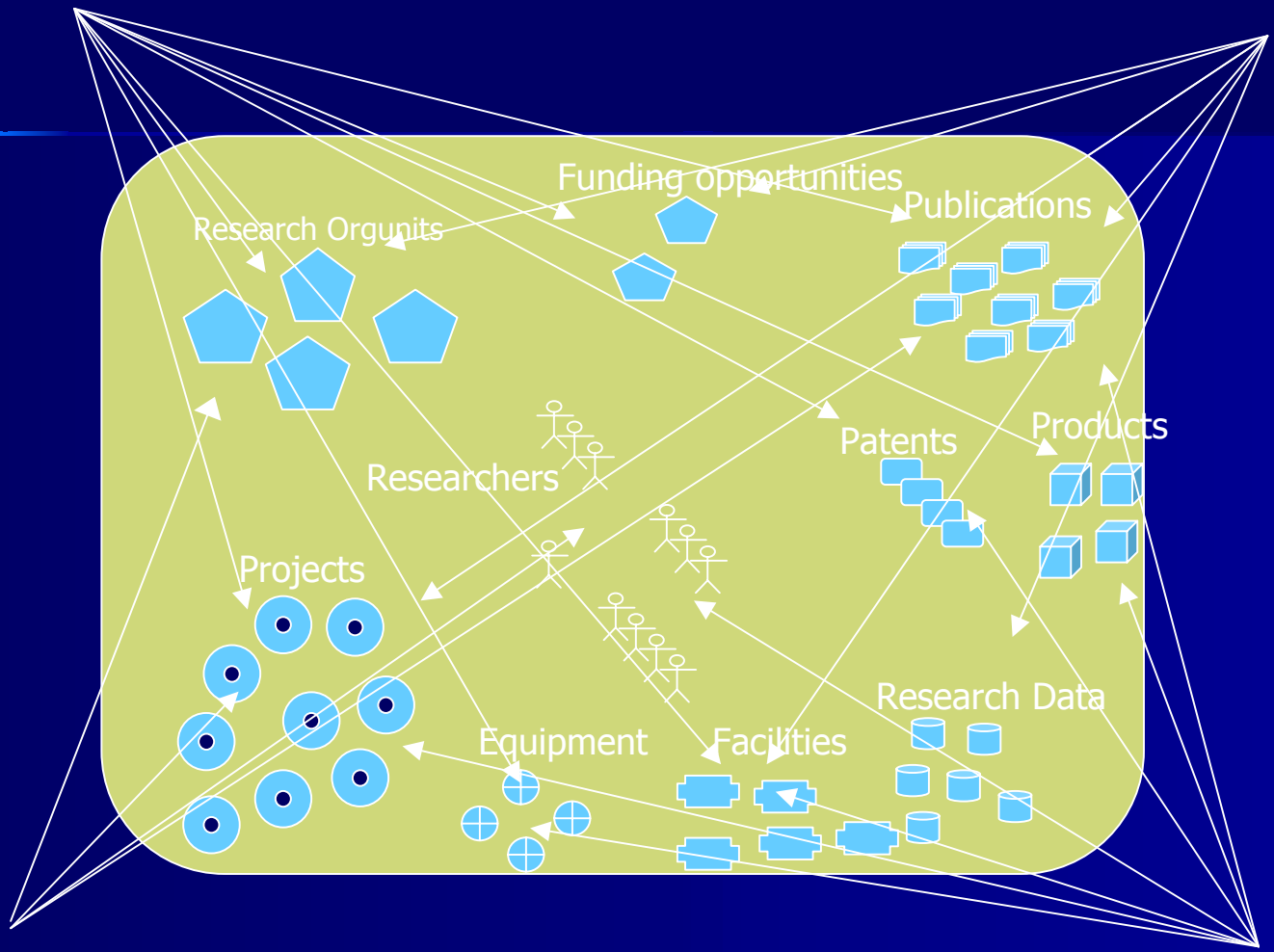
CERIF


OrgUnit
Project
Person_Orgunit
Contact
Person_Contact
Person_Event
Event
Project_Person
CV
Person_CV
Person_Equipment
Equipment
ExpertiseAndSkills
Person_ExpertiseAndSkills
Person
Person_ResultPublication
Result_Publication
Person_Person
Classification
Result_Patent
Person_ResultPatent
Person_ResultProduct
Person_Facility
Person_Service
Result_Product
Service
Facility

Information Users

Management

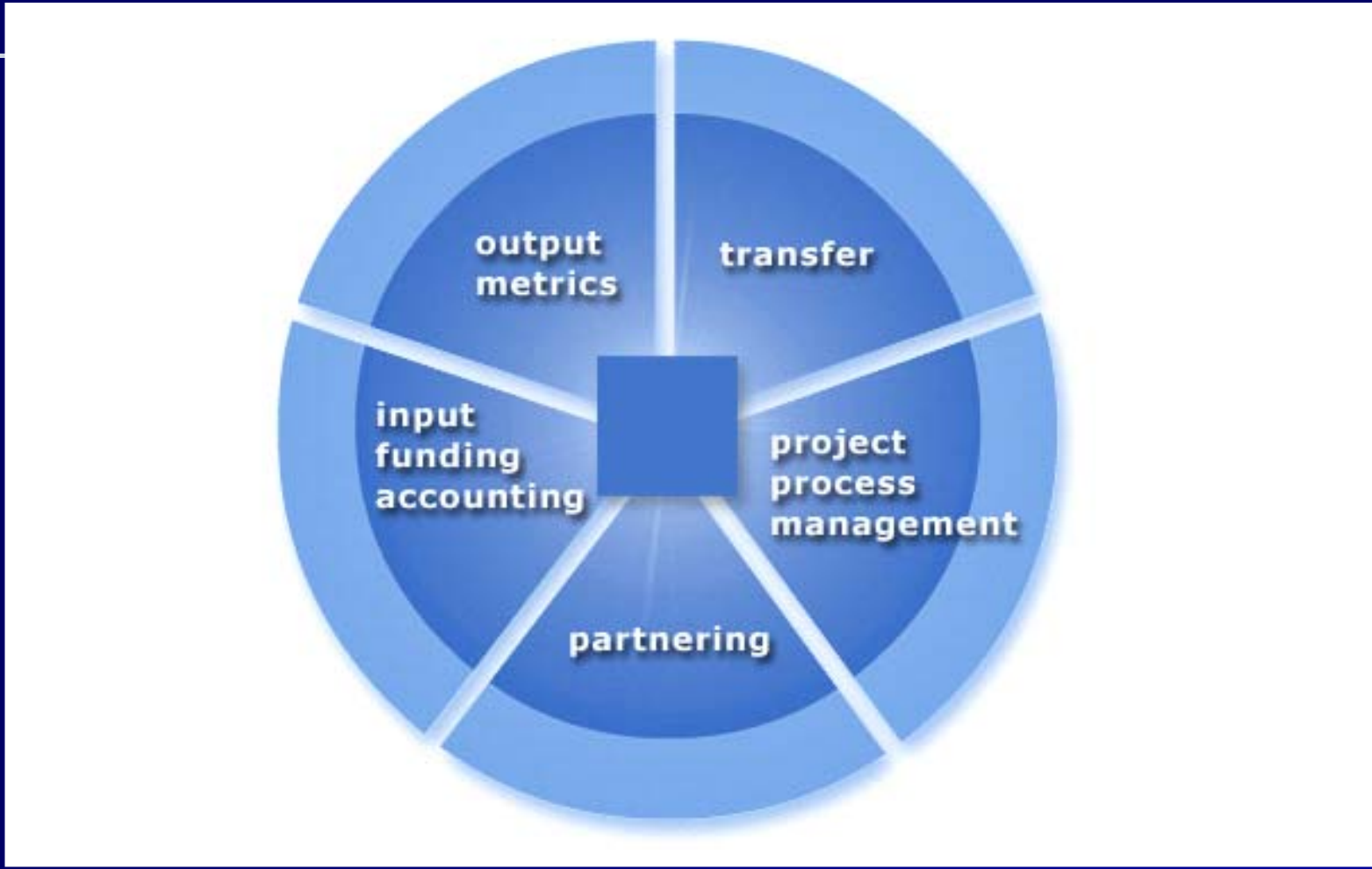
Researcher



Public & Media

Industry

Output requirements for a CRIS



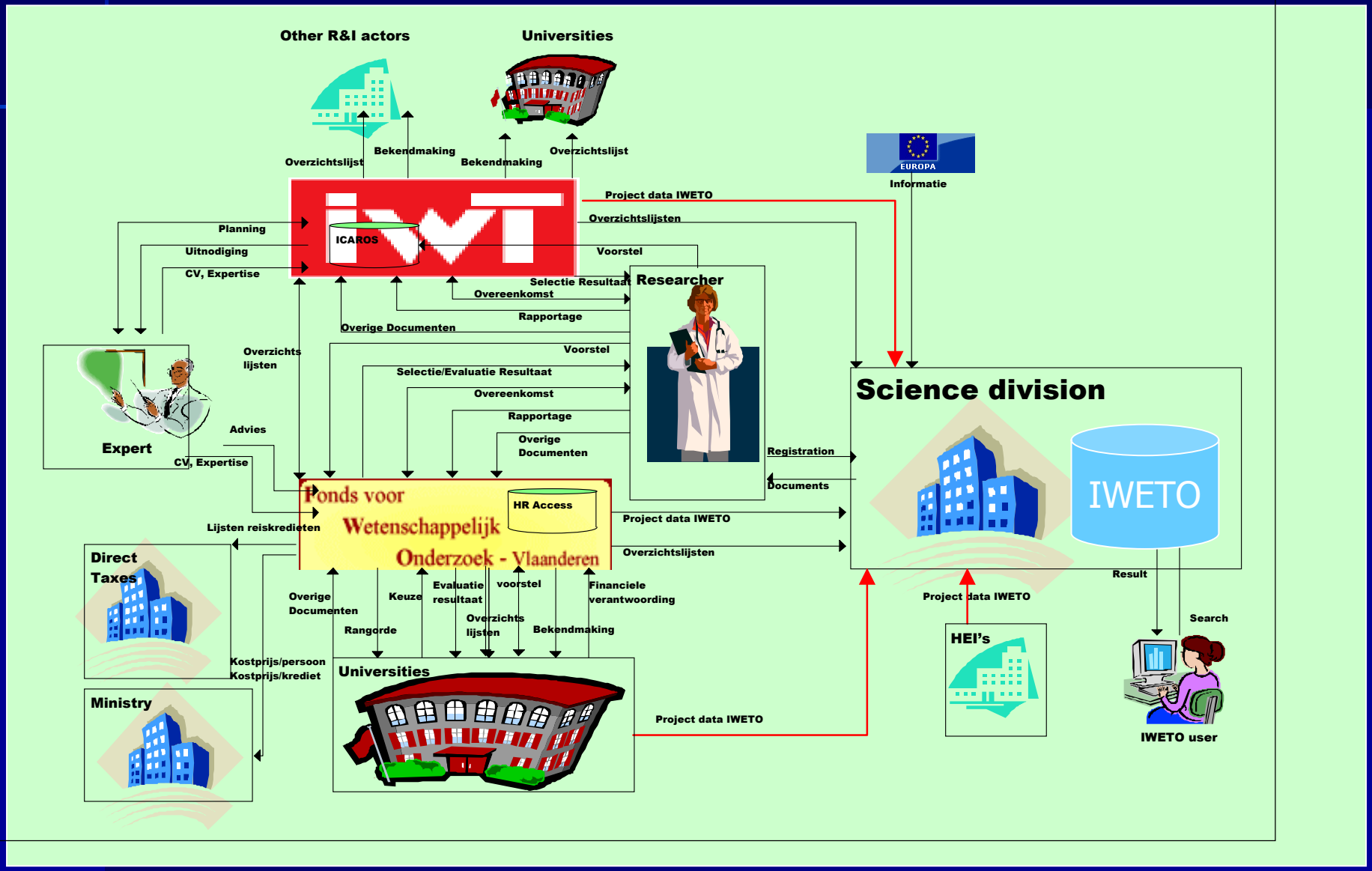
The different output requirements for a research information management system (Copyright: uniCRIS AG)

The Research and Innovation Added Value Chain

	Research and Innovation Framework		Knowledge Creation		Knowledge Documentation and Distribution		Knowledge Appliance
Role	Policy Making	Funding	Creation I	Creation II	Documentation	Distribution	Appliance
	Optimize framework	Allocation	Fundamental research	Applied research	Physical and logical repositories	Match requests and offering of research information	Development (products, services, markets, processes, etc)
Value Add	Framework, information clearing	Funding allocation	Knowledge, creation, brains, clustering	Knowledge creation, innovation	Information storage and retrieval	Information distribution, knowledge allocation	Innovation, employment, wealth creation

An overview with all involved stakeholders, their roles and their value add within the Innovation Added Value Chain (Copyright: uniCRIS AG)

Consolidated overview of information flows: Project Funding

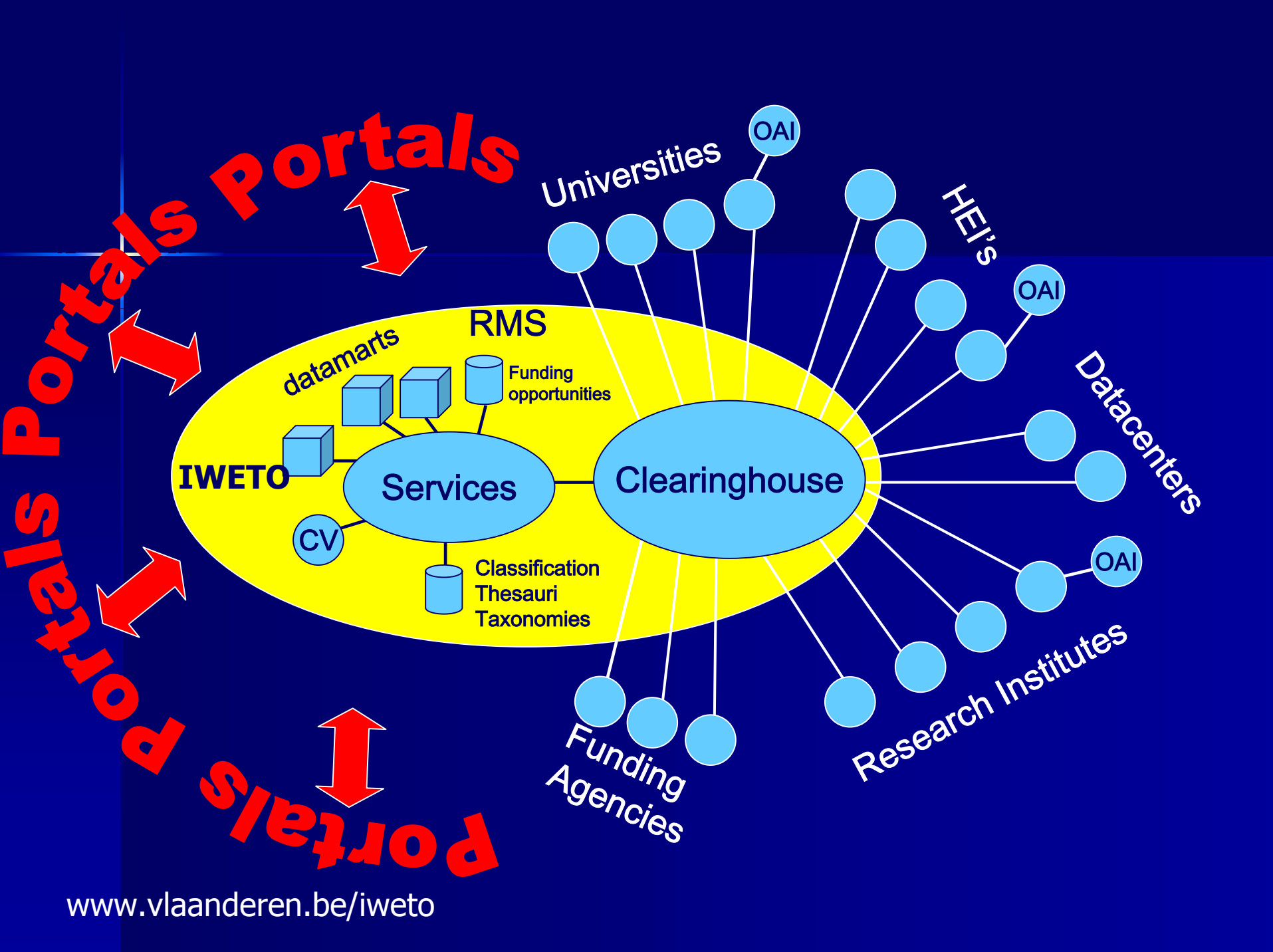


Current Research Management system

- Principles
  - Distributed information architecture
  - Scalable
  - Authentic sources
    - Identifiers
    - Data quality produced in the processes
  - Cross-roads databases
    - Researcher CV environment
    - Central metadata repository
  - Agreed information framework
    - Meta data schemes and protocols
      - AOI-PMH & Dublin Core
      - CERIF
  - SOA-components library

Quality data & information

- Capture information directly from within the electronic business processes
  - Cross-organisational workflow management
  - Common understanding of the business objects
  - Common expression of the business objects
  - Common expression of their relations
  - Common understanding on primary data owners
- Primary identifiers in alignment with processes



www.vlaanderen.be/iweto

The Flemish Research Information Space

- Globally (includes all stakeholders)
- Network of federated repositories
- For & by all stakeholders
  - researchers, educators & students
  - industry
  - management
  - public
- Open Acces via open standards
- Semantically rich environment
- Maximal formal information interconnection

The Flemish Research Information Space

- Services
  - CV environment
    - Registered researcher (unique id)
    - Embedded in the processes
    - Specific push services
      - Researcher profile
      - CRIS content
  - Funding opportunities
    - Push service available for registered users
      - profile
    - Problem: Funding programme metadata schema
  - Classification management environment
    - Web based collaboration tool
    - Reconcile the classification in use

Conclusions

- Information Integration through process and workflow integration
  - Quality
  - Timeliness
  - Consistent context
  - ➢ Prerequisite for sustainable portals
- Much less an IT problem than an organisational one
  - Essential technology is available
    - Web services & middleware
  - Metadata models: CERIF + DC
  - Persistent identifiers still a problem