ELISE action
Webinar Series

Workshop: Data Ecosystems for Geospatial Data

European Location Interoperability Solutions for e-Government

Enabling Digital Government through Geospatial and Location Intelligence

12/11/2020 at 14:00 CET (UTC+1)

ISA²

European Commission

LUXEMBOURG INSTITUTE OF SCIENCE AND TECHNOLOGY | LIST

Introduction

Alexander Kotsev, JRC

Data Ecosystems for Geospatial Data

- Study, in the context of the ELISE ISA2 action started in January 2020
- Performed by the **Luxembourg Institute of Science and Technology (LIST)** in close collaboration with **Joint Research Centre** of the **European Commission**.
- **Study objectives:** Identify and analyse a **set of successful data ecosystems** and to address **recommendations** in support of the evolution of spatial data infrastructures and implementation of data-driven innovation in line with the recently published **European strategy for data**.
- **Workshop objectives:** Sharing the study results and discussing the recommendations

ELISE

European Interoperability Programme

cross-border and *cross-sector* Interoperability solutions

for ***public administrations, businesses*** and ***citizens***

54 different actions tackling **interoperability** from different angles

ELISE action is the **only** action focusing on the **location dimension**

Data Ecosystems for Geospatial Data

Prune GAUTIER
Sébastien MARTIN
Slim TURKI
Luxembourg Institute of Science and Technology (LIST)

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Research and Technology Organization (RTO)

Develops innovative and competitive solutions in response to the key needs of Luxembourgish and European economies.

- **Employees**: ~600 | **Budget**: EUR 66 millions
- **Activities**:
  - Fundamental and applied scientific research, development of knowledge and competences;
  - Experimental development, incubation and transfer of new technologies, competences, products and services;
  - Scientific support to the policies of the Luxembourgish government, businesses and society in general;
  - Doctoral and post-doctoral training, in partnership with universities.

Fields of activity

- Digital innovation
- Ecological innovation
- Materials innovation

Interdisciplinary portfolios

- Smart cities
- Spatial sector
- Industry 4.0
- FinTech and RegTech

✓ **Open Data release and re-use**
✓ **Data Ecosystems**

AGENDA

- Study approach - LIST
  - Data ecosystems in-depth analysis
  - Modular analysis framework
- Panel - LIST
  - Marion Glatron, Simon Saint-Georges, Rennes Métropole
  - Sean Wiid, UP42
  - Dan Isaac, SPIRE
  - Théo-Paul Haezebrouck, api-agro.fr
  - Rink W. Kruk, National Geographic Institute of Belgium
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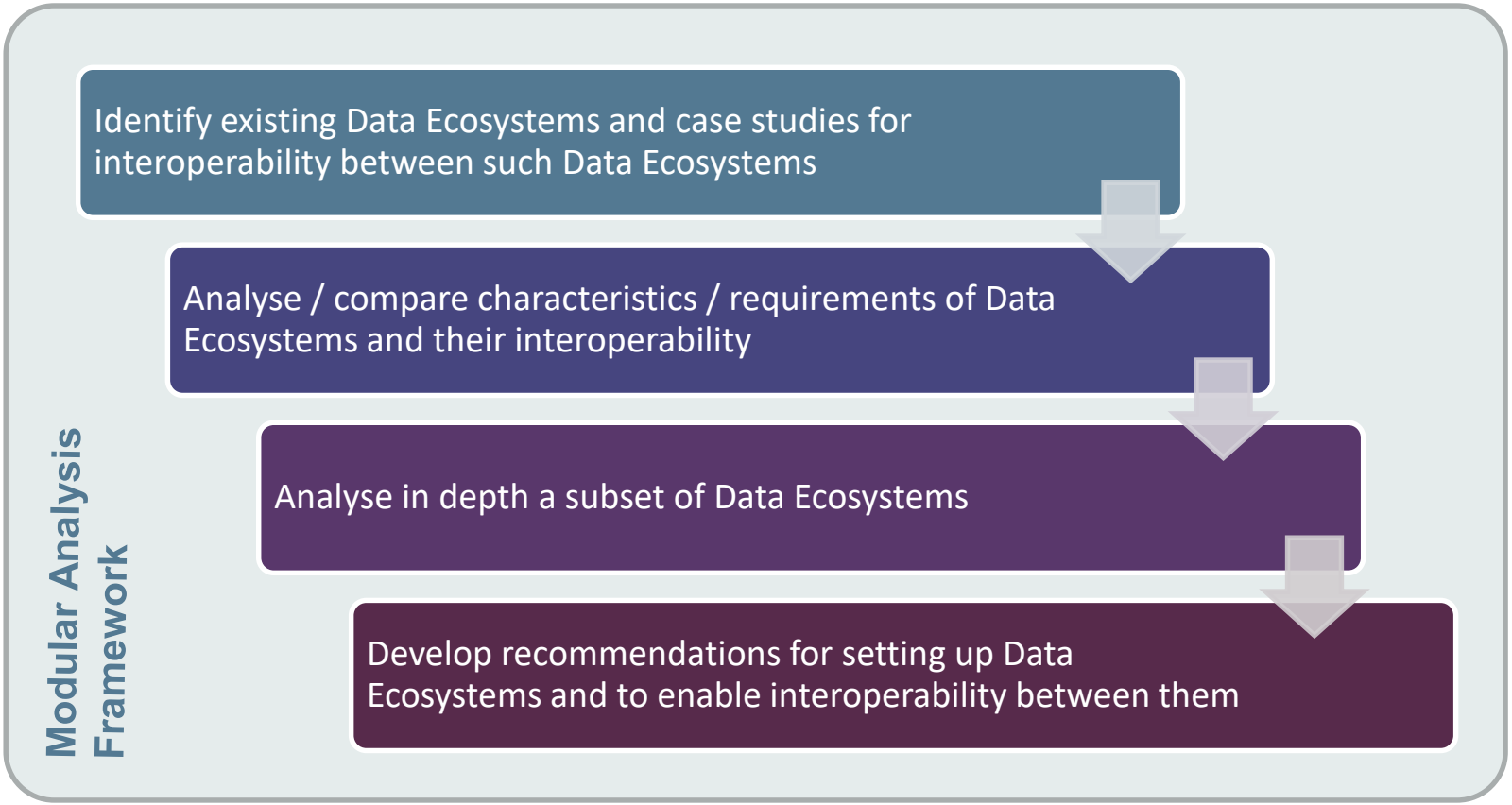
Empirical Approach



Data Ecosystems

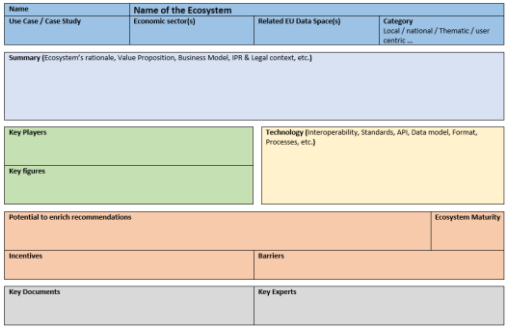
In-depth analysis

Local Data Ecosystem	Geospatial Data Marketplace	Tracking technologies for supply chain	Smart Agriculture	Disaster Management

• Rennes Métropole
• Collaborative and partnership-based local data strategy
• Inclusive and sustainable governance model
• City as trusted third-party: citizens to take back control over their personal data
• RUDI (Rennes Urban Data Interface)
	• UP42
	• Platform gathering geospatial data and processing algorithms
	• Revenue sharing model: Value distribution across the stakeholders
		• SPIRE
		• Constellation of nanosatellites
		• Earth Observation
		• Maritime: AIS messages
		• Weather: Radio occultation
		• Aviation: ADS-B data
			• API-AGRO
			• B2B data exchange platform for the agricultural sector
			• functional, technical, commercial and legal framework
				• Brussels emergency services
				• Common Data on Topography, Climate and Water, DK
				• Emergency Management phases
				  • Mitigation
				  • Preparedness
				  • Response
				  • Recovery
				• Time dimensions
				  • Real-time
				  • Historical and Simulation

MODULAR ANALYSIS FRAMEWORK

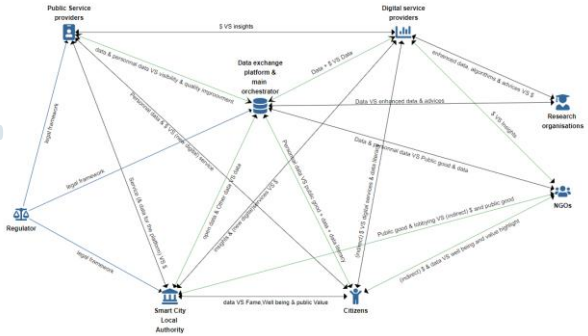
1



Ecosystem Summary

Overall representation of the ecosystem key aspects

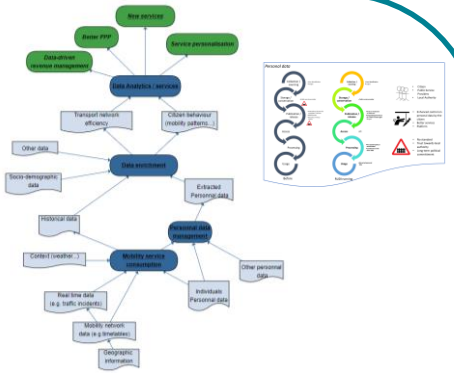
2



Ecosystem Value Dynamics

Interactions between stakeholders.

3



Ecosystem Data flows

Associated data flows / Data life cycles

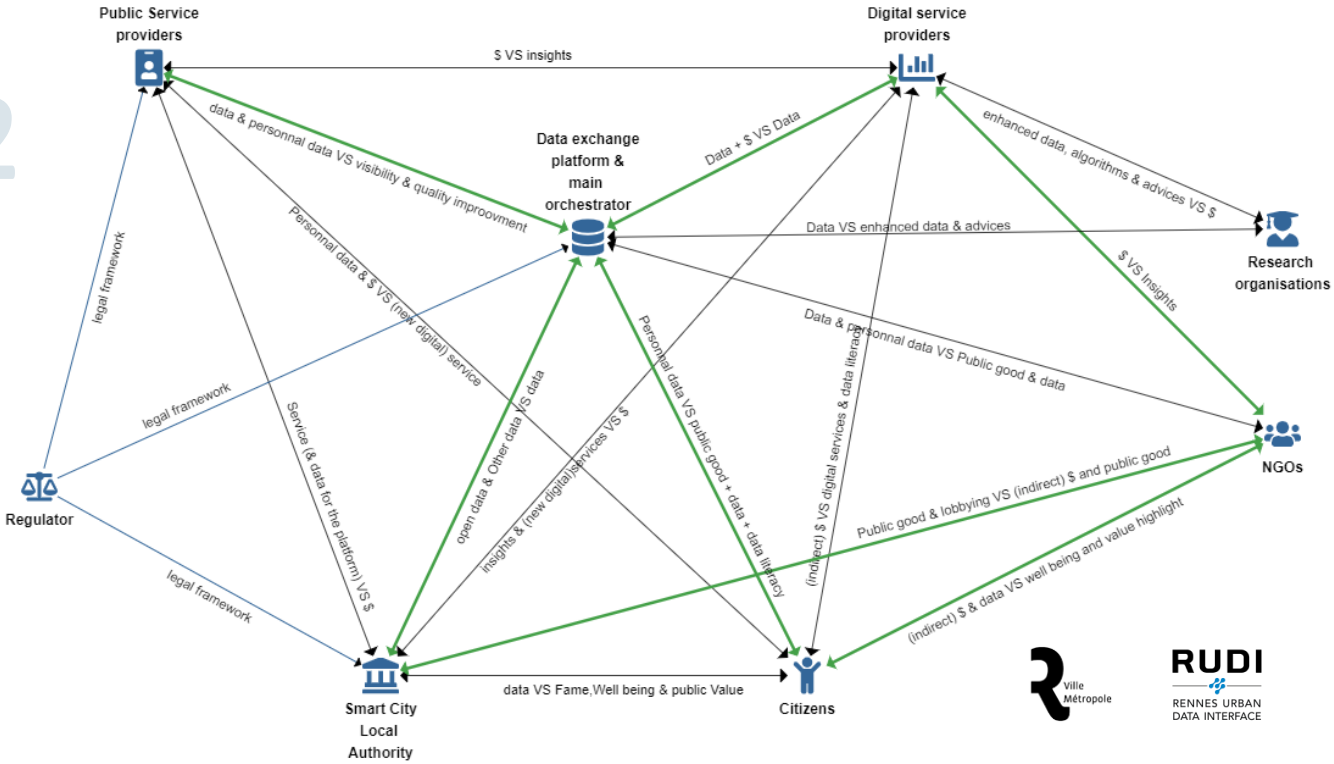
Desk research
- Academic literature
- Public Reports
- Stakeholders' documentation

Qualitative data
- Interviews

ECOSYSTEM VALUE DYNAMICS

Interactions between stakeholders

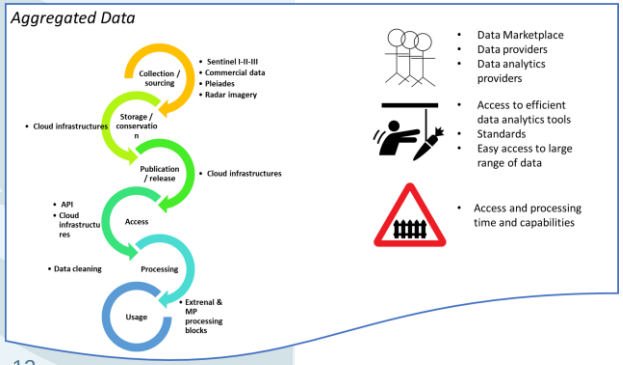
- Value networks modelling
- Illustrate resources exchanged between the stakeholders, and their value
  - follow the value creation
  - highlight the orchestration
  - evaluate the sustainability of the ecosystem

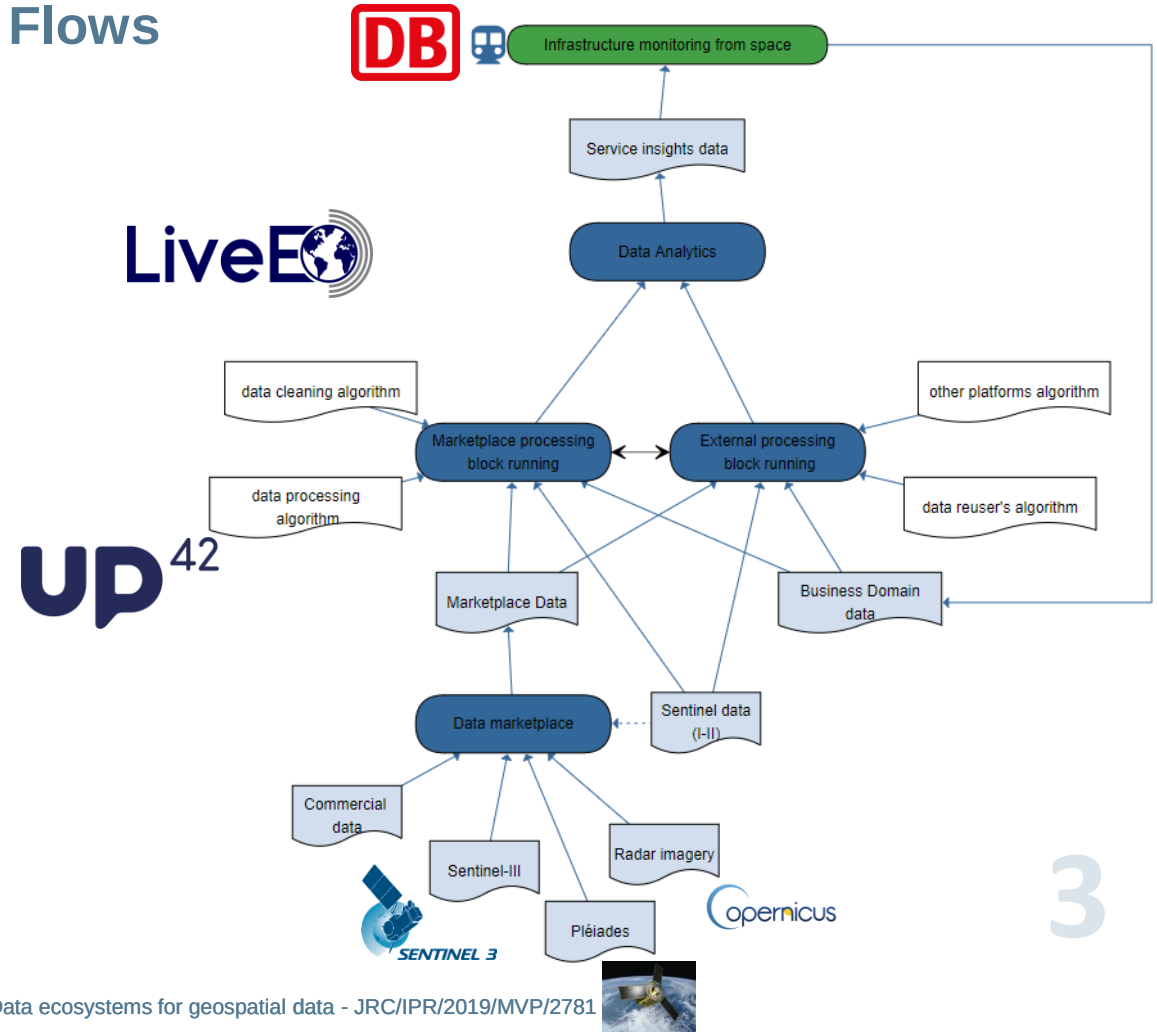


Ecosystem Data Flows

Data life cycles

- Proxy of maturity and health of an ecosystem
- Approach and graphical representation are derived from product lifecycle model





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PANEL

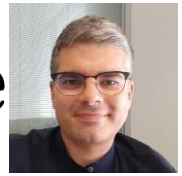
INTRODUCTION: OUR DATA ECOSYSTEMS EXPERTS

Marion Glatron
Smart City & Innovation Director
Rennes Métropole

Simon Saint-Georges
Project Manager
Rennes Métropole

Sean Wiid
CEO
UP42

Daniel Seidel
Co-Founder
LiveEO



Dan Isaac
Business Development Executive
Spire

Théo-Paul Haezebrouck
Digital Expert in Agriculture
Agdatahub

Rink W. Kruk
Public Policy specialist
National Geographic Institute of Belgium

PANEL QUESTIONS 1/4

G02: Identifying the most relevant actor(s) to embrace the role of orchestrator depending on the nature and evolution of the ecosystem.

G05: Avoiding a fragmented landscape of stakeholders and a lack of centralised governance.

Governance

G07: Exploring the role of local authorities in local data ecosystems over time

G06: Importance of considering and aligning stakeholders' different cultures.

G03: Clear consideration (roles, benefits, needs and means) for all stakeholders ensure the willingness to make the data ecosystem sustainable.

G01: Building a collaborative governance of the ecosystem.

G04: The creation of a platform provides a strong incentive to structure the ecosystem.

PANEL QUESTIONS 2/4

SE01: Defining and integrating the relevant stakeholders enabling the success of the ecosystem.

SE02: Distributing value between the stakeholders

Stakeholders Engagement

SE05: Organising events to increase awareness in the ecosystem and interactions frequency.

SE06: Building a data social network.

SE03: Considering citizen as true stakeholders

SE07: Raising awareness on the orchestration function played by Regulators

RECOMMENDATIONS 3/4

D12: Aligning the data ecosystem with other components such as cloud and software ecosystems

D09: Integrating in the platform not only data but also services and even computational infrastructure.

D07: Put the APIs at the core of the approach.

D01: Fostering ecosystem sustainability through problem solving approach, leading to new data cycles

D08: Choosing the platform architecture based on the specific features of the ecosystem.

Technical issues

ES08: Extracting the value of personal data

D06: Integrating data ecosystems and data cooperatives & trusts

D02: Strengthen the relationship between the data ecosystem development and the digital transformation of stakeholders

D05: Stimulate the datafication of a broader range of sectors

ES03: The creation of a platform is a strong enabler of business opportunities and implementation, as well as related data flows.

RECOMMENDATIONS 4/4

ES01: Integration of Open Access, Open Source, Open Innovation and Open data Paradigms

ES07: Strong political and societal support facilitate the sustainability of the data ecosystem.

ES02: Emphasizing an adaptive and agile orchestration for the ecosystem evolution, especially for data collection

D13: Facilitate the access to real time and Time series.

Economic Sustainability

ES04: Synergies between individual stakeholders business models are the key condition for the overall ecosystem sustainability.

ES05: Data ecosystems rely on long term engagements.

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Recommendations

TRANSVERSAL INSIGHTS

Evolution of spatial data infrastructures

Vision of the ecosystem

- To understand a given data ecosystem, to assess the best pratices or the challenges faced by an ecosystem
- To increase awareness

Role of orchestrator:

- **Data release and standardisation (D10, D11)**
  - Of new domains (ELISE previous reports)
  - Of personal & private sector data
  - Of crowdsourced data (D04)
    - Weather ecosystem in the USA (mPING)
    - Data trusts / cooperatives
      - Health ecosystem (MIDATA)
  - Ensuring the broad & long-term adoption of standards
    - Standards usability
- **Sustainability of data collection & data sharing initiatives**
  - Roles of public and private actors in data collection
  - For private companies, combination of mandatory measures and incentives
    - Data sharing by companies as a result of the GDPR (D03)
    - Strong influence of profitable business models
- **Knowledge flows / embeddedness**
  - Data literacy (SE04)

Distributed orchestration tasks?

- Different roles of orchestration among ecosystem's participants
- Depending on the place in the data lifecycle or in the value chain

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Interactive session

Conclusions & Next Steps

Uptake of the recommendations

1. Europe Fit for the Digital age

- European Strategy for Data
  - Establish a pan-European single market for data
    - Regulatory sandboxing
    - Emphasis on the benefits of different actors
    - Sector-specific data spaces
- White paper on AI
  - Extensive reuse of available data
- Open Data Directive
  - High-value datasets (exposed through APIs)
- Digital Europe Program

2. European Green Deal

- GreenData4all initiative & modernising INSPIRE
- Destination Earth

Thank you for your participation!

Thank you to all those who participated to the study, for their time, for their feedback and for their kindness.
We are grateful to you.

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