



# ELIXIR Luxembourg

## Data hosting service as a sustainability solution

*Dr. Venkata Satagopam  
Technical Coordinator, ELIXIR-LU*

# ELIXIR

— A distributed infrastructure for life-science information

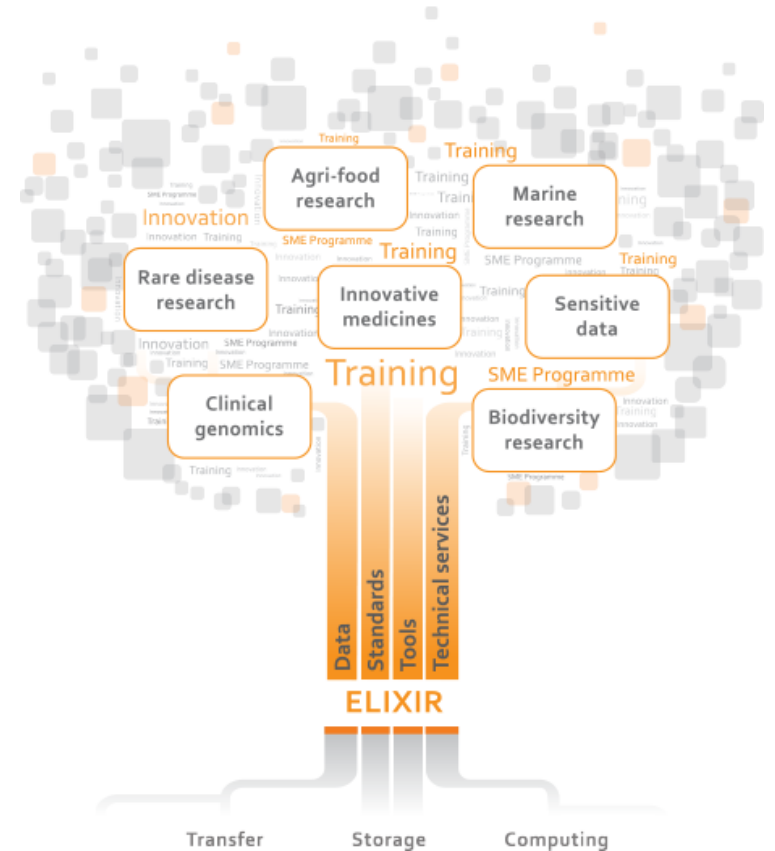
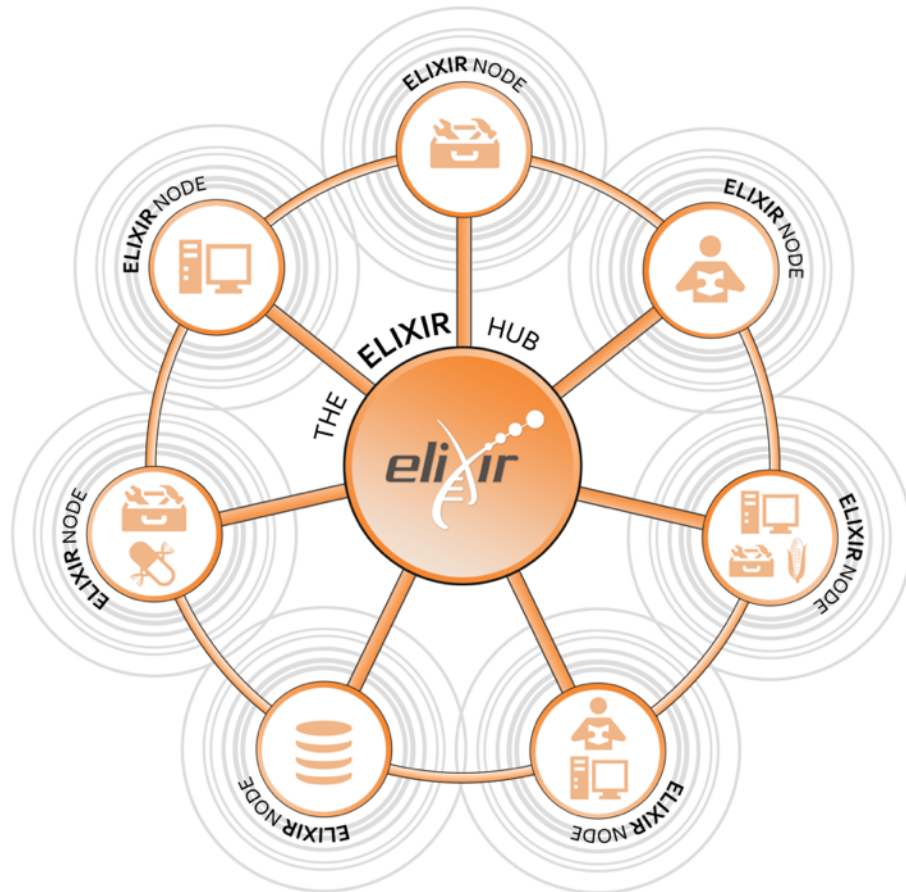


**The challenge** Increasing volume of data in life sciences  
Lack of accessibility  
Lack of awareness of existing data  
Lack of sustainability

**The mission** Create a data community in life sciences:  
Existing data resources and services  
Quality control  
Access provision  
Compute tools  
Archiving  
Training

# ELIXIR

## — Structure and Model



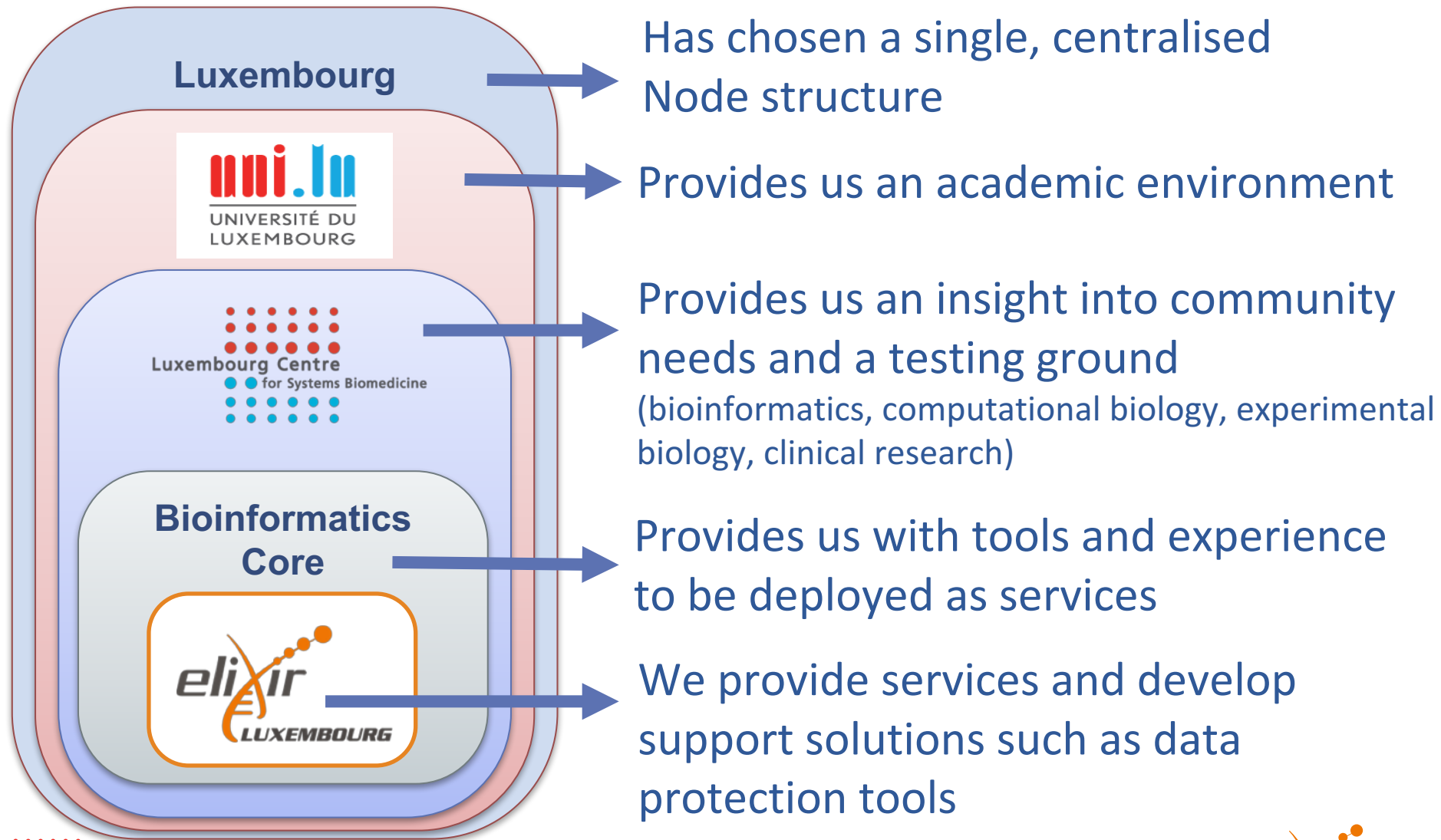
**Central Hub:** coordinate overall activities

+

One **national node** from each member state: with its only focus and mission

# ELIXIR-LU affiliations

– Our hosts in Luxembourg



# Mission of ELIXIR-LU Node



## Giving life to data

- Engagement around FAIRification
- Hosting and making available to the community
- Wrestling with data protection requirements and restrictions

## Focus: clinical and translational medicine

- Clinical data
- Omics data
- Imaging data
- Mobile/sensor data
- Planned: socio-economic and environmental data

## A service to the research community

- Reach out to the biomedical research stakeholders

# The data challenges: Sustainability

— For finished or ongoing clinical/translational projects

## Targets:

- Valuable data from (international) clinical/translational projects: high cost to collect/generate and sensitive in nature.
- National bio-medical projects IT hosting needs.

## Challenges:

- Limited funding period ( typically 3 to 5 years): such as IMI, H2020, FNR and similar funding programs.
- Difficult for data owners to keep hosting (large) datasets, do access management (particularly to to comply with requirement of sensitivity)

# Services and Infrastructure

— State of art (Tier 3 equivalent) data centre



# ELIXIR-LU

## — Service and platform portfolio



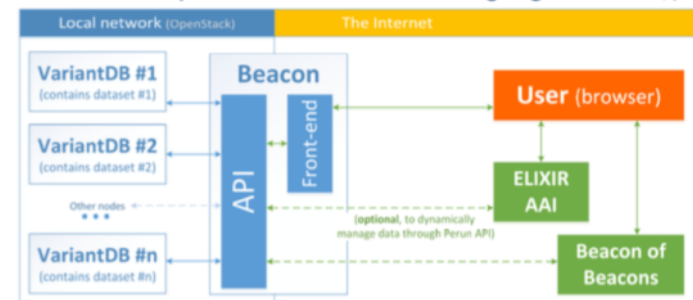
Beacon.lu: Architecture  
<http://beacon.elixir-luxembourg.org>



Findable

F

<http://datacatalog.elixir-luxembourg.org>

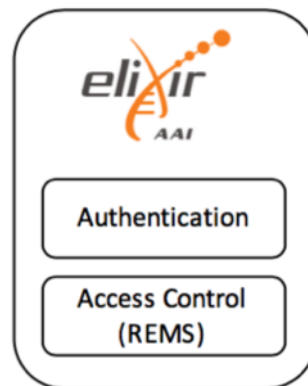
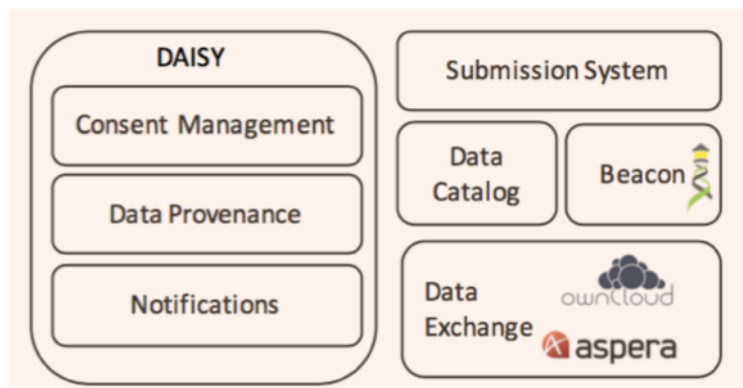


Open, searchable catalog with metadata of translational medicine datasets

Finding annotated variants in access controlled setting

Accessible

A



Free hosting if data are made available to the research community

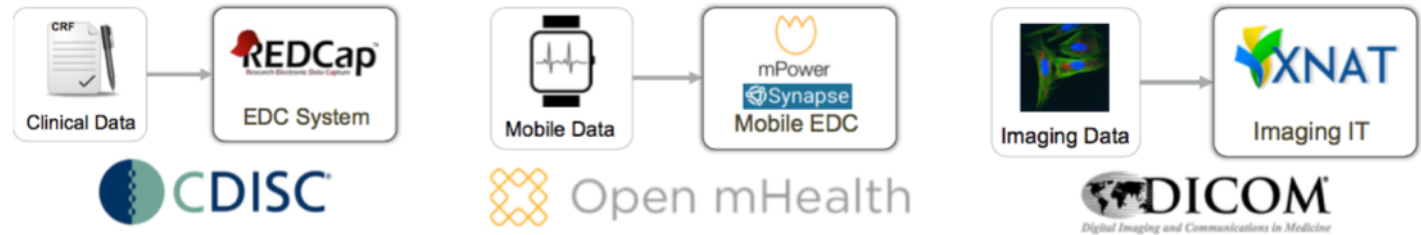
Hosting and access management in compliance with the General Data Protection Regulation (GDPR)



# ELIXIR-LU

## — Service and platform portfolio

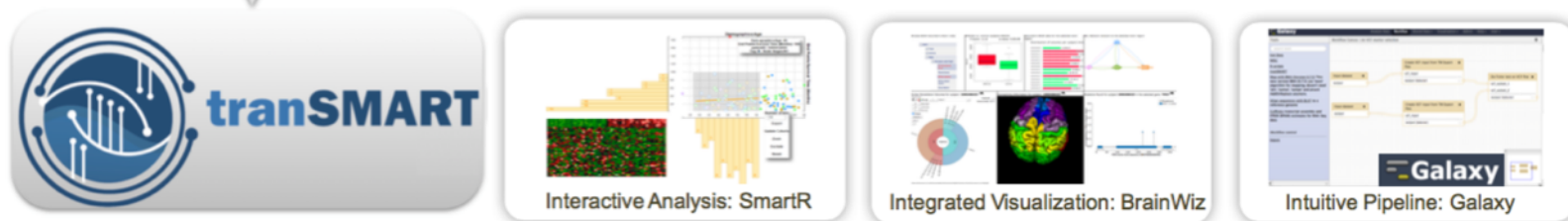
### Interoperable



Electronic case report forms (eCRFs)  
with controlled vocabulary and based on CDISC

Collection and storage of data from devices  
in compliance with international standards

### Reusable



Clinical, 'omics, imaging data integration platform  
for curated and standardised data

Analysis platforms for visual  
and intuitive data analytics

# ... and lots of hands and brains!!

— The GDPR team of ELIXIR-LU



# Examples

## — International project: IMI-eTRIKS



### FACTS & FIGURES

Start Date	01/10/2012
End Date	30/09/2018
Call	IMI1 - Call 4
Grant agreement number	115446

Type of Action:  
RIA (Research and Innovation Action)

<b>Contributions</b>	<b>€</b>
IMI Funding	10 309 818
EFPIA in kind	10 795 178
Other	2 680 745
<b>Total Cost</b>	<b>23 785 741</b>

### eTRIKS

Delivering European Translational Information & Knowledge Management Services

Ongoing | IMI1 | [Big data and knowledge management](#)



### Summary

Many IMI projects involve the integration of data from different sources, and until now every project has had to devise its own solutions to the problems raised by data sharing. Enter eTRIKS, which aims to create and run an open, sustainable research informatics and analytics platform for use by IMI (and other) projects with knowledge management needs. In addition, the project partners will provide associated support, expertise and services to ensure users gain the maximum benefit from the platform.



### Achievements & News

#### Luxembourg joins ELIXIR, sustainability of eTRIKS ensured

July 2016

IMI projects gather **vast amounts of data** during their lifespan, and once they end, there is usually the question – how to ensure that this data becomes available to the public, benefiting society in the long run? Thanks to the work of the [Luxembourg Centre of Systems Biomedicine](#) (LCSB) at the University of Luxembourg and their involvement in IMI's [eTRIKS project](#), now there is a solution.



# Examples

— International project: IMI-eTRIKS

Active Filters **and or**

Navigate Terms

- Across Trials
- eTRIKS
- Public Studies
  - Cancer Cell Line Encyclopedia (1070)
  - GEO Studies
    - Acute Myocardial Infarction(AMI)
    - Asthma
    - Breast Cancer
    - Chronic Obstructive Pulmonary Disease(COPD)
    - Epilepsy
    - Inflammatory Bowel Disease
    - Lupus Nephritis
    - Macrophages
    - Multiple Myeloma
    - Multiple Sclerosis
    - Parkinsons Disease
    - Psoriasis
    - Rheumatoid Arthritis
    - Systemic Lupus Erythematosus[SLE]
  - GSK Cell Lines (950)
    - Biomarker Data (950)
    - Samples and Timepoints (950)
    - Subjects (950)
  - TCGA Studies
    - Breast Invasive Carcinoma (BRCA\_MERCK) (1098)
    - Breast Invasive Carcinoma [BRCA] (849)
    - Colon Adenocarcinoma [COAD] (276)
    - Lung Adenocarcinoma (LUAD\_MERCK) (568)
    - Ovarian Cancer (OV\_MERCK) (597)
    - Ovarian Serous Cystadenocarcinoma [OV] (488)
    - Uterine Corpus Endometrial Carcinoma [UCEC1] (373)

Comparison Summary Statistics Grid View Advanced Workflow SmartR Data Export Export Jobs Workspace Genome Browser

Subset 1



Include Exclude

DRAG YOUR CONCEPTS HERE

Subset 2

Include Exclude

DRAG YOUR CONCEPTS HERE

 + 

## Datasets hosted by ELIXIR-LU

- 180 curated public studies
- Project generated datasets
- 20 disease areas

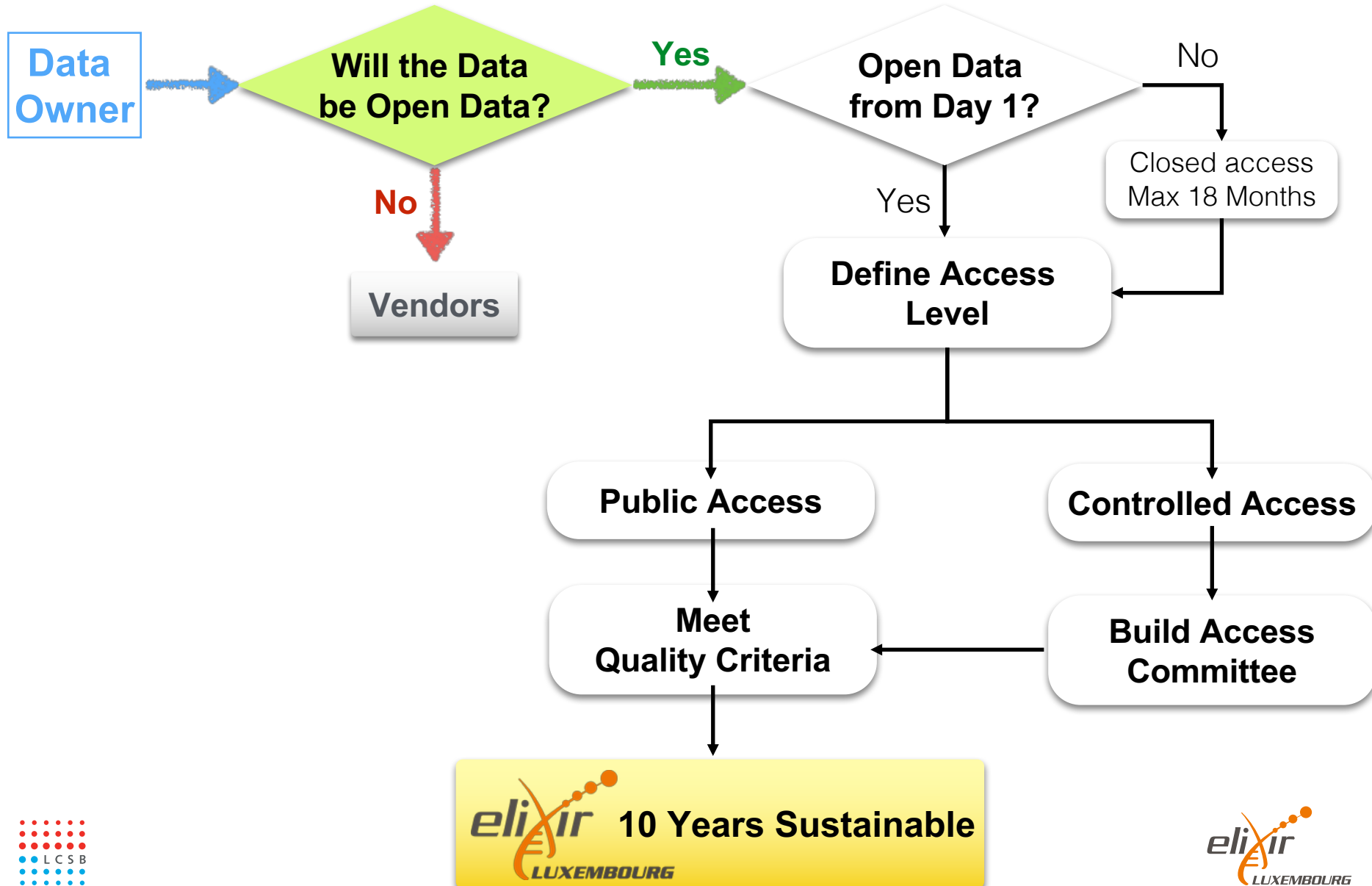
<https://public.etriks.org>

# Examples

— Projects in the process of engagement



# Engagement Model





# ELIXIR-LU — Service conditions

## Free services if

- Data are made available to the research community (optional “embargo” period: 18 months closed access)

## Service framework

- Hosting and management for at least 10 years
- Access handling by ELIXIR-LU
- Compliance check with consent / use conditions by ELIXIR-LU (data provider has veto right for reasonable objections)
- ELIXIR-LU will handle contractual matters during the service agreement period

# ELIXIR-LU - Storage of GGeoPD data

## Current status

- GGeoPD website migrated to ELIXIR-LU
- REDCap instance has been setup to collect minimal dataset
- Data hosting agreement is under discussion with steering committee



## Technical services

- Venkata Satagopam  
[Venkata.Satagopam@uni.lu](mailto:Venkata.Satagopam@uni.lu)



## Data protection and contractual framework

- Regina Becker  
[Regina.Becker@uni.lu](mailto:Regina.Becker@uni.lu)
- Linda Ebermann  
[Linda.Ebermann@uni.lu](mailto:Linda.Ebermann@uni.lu)



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