# EIRENE RI: **Research Infrastructure for** EnvIRonmental Exposure assessmeNt in Europe

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# EXPOSOME: Internal and external factors Life course dimensions

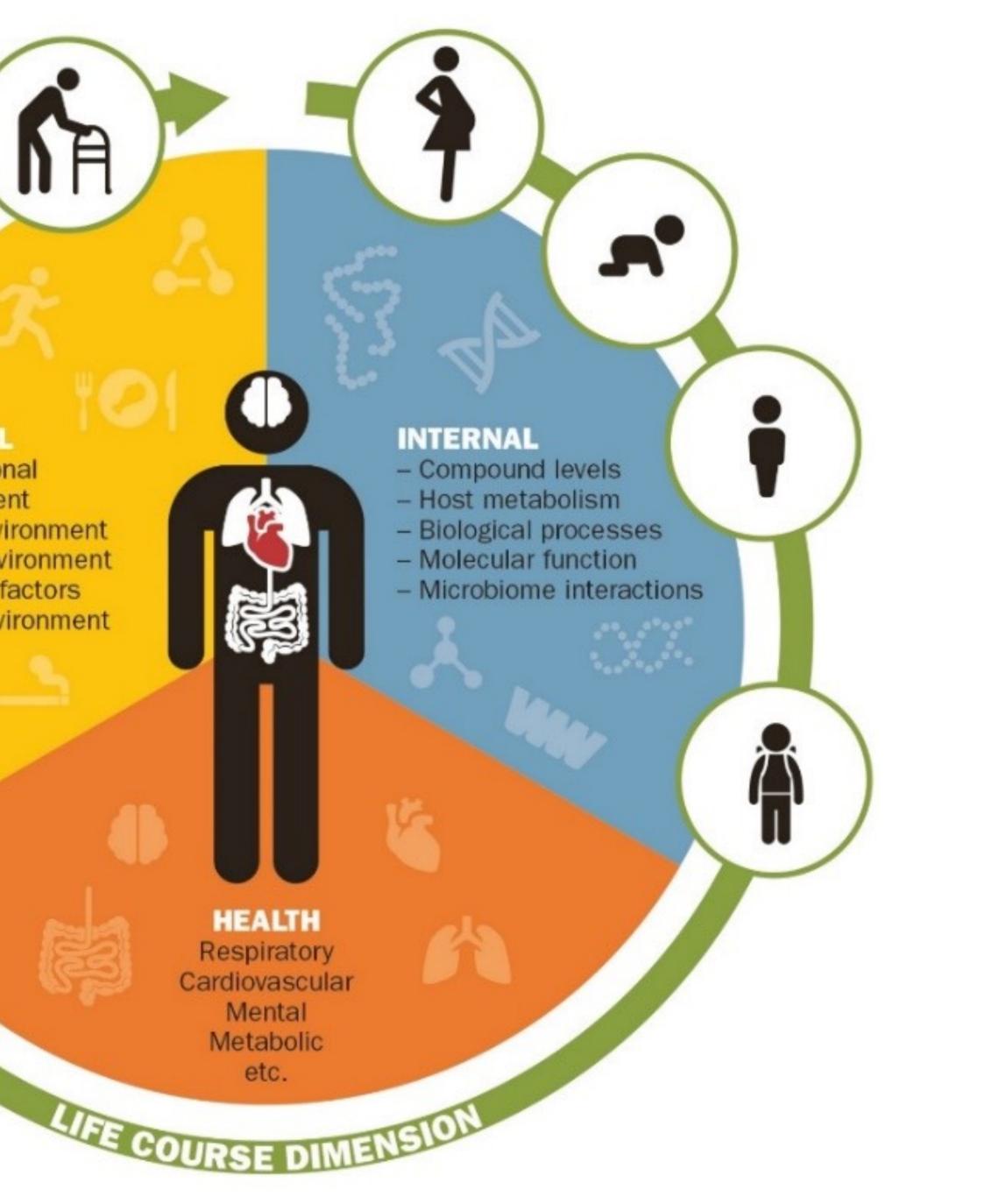
### EXTERNAL

- Occupational
- environment
- Urban environment
- Indoor environment
- Life style factors
- Social environment

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## A gap identified in the Health&Food domain of 2018 ESFRI Roadmap

"There is a need to enable a research infrastructure that will facilitate research on the human health and wellbeing at all stages in development, including ageing, nutrition and behavioural studies, and their connections to the social sciences and humanities. There are geographic, economic and environmental drivers affecting human health and wellbeing. Climate change, extreme weather, dramatic changes in ecosystem services, environmental pollution and exposure to harmful chemicals represent a new combination of issues that require an integrated approach at pan-European level.

At the heart of this approach is the EXPOSOME, taking a holistic view throughout the human lifetime on the effect of exposures to diet, lifestyle, and the environment on human health and disease. The EXPOSOME coupled with advanced genetic and medical approaches represents an opportunity to tackle this complex issue by connecting to the landscape of Health & Food RIs and other domains. Ongoing EU projects and networks on human biomonitoring (HBM4EU and EMEP) are important steps to bring together relevant parties."

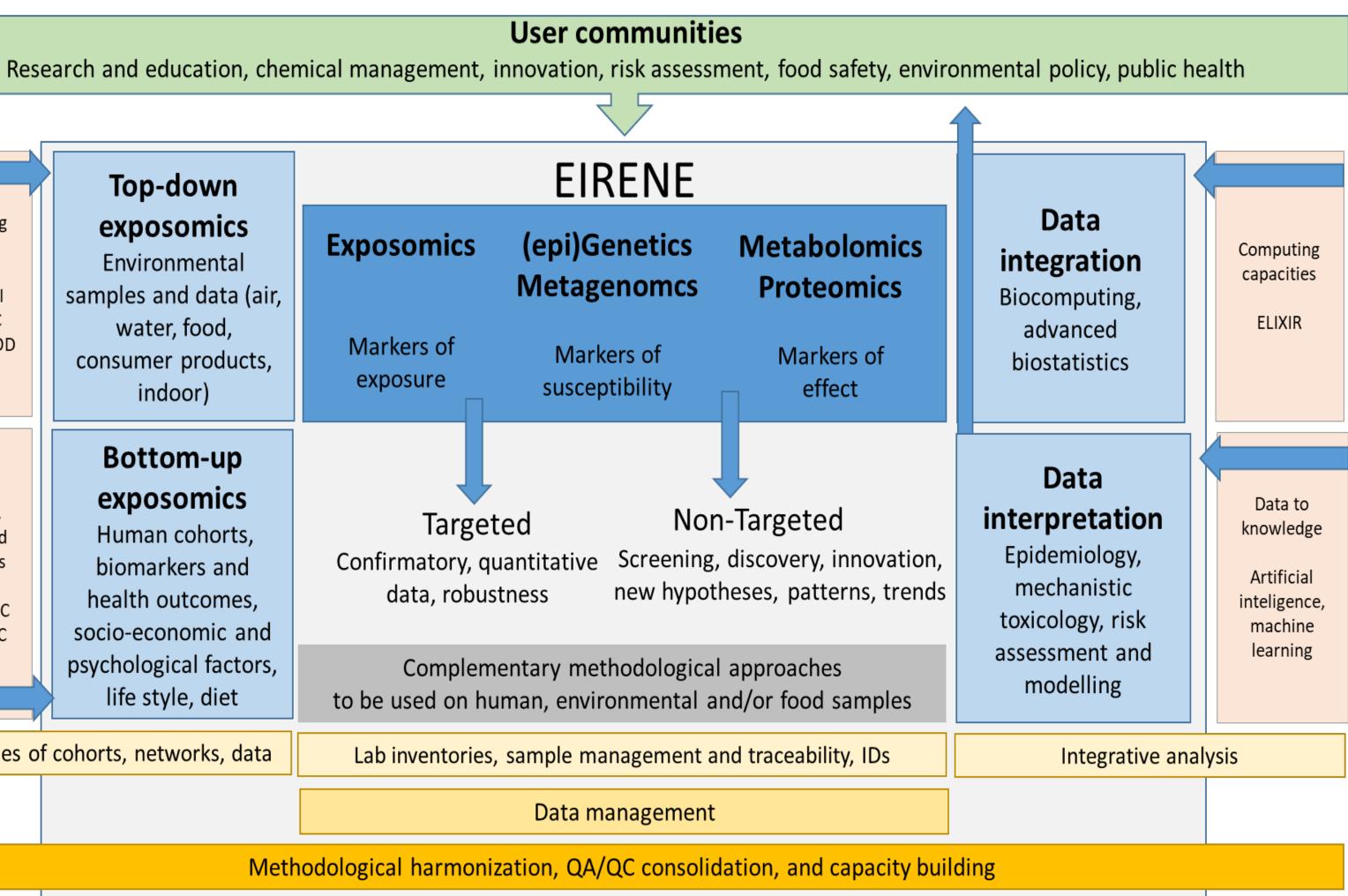






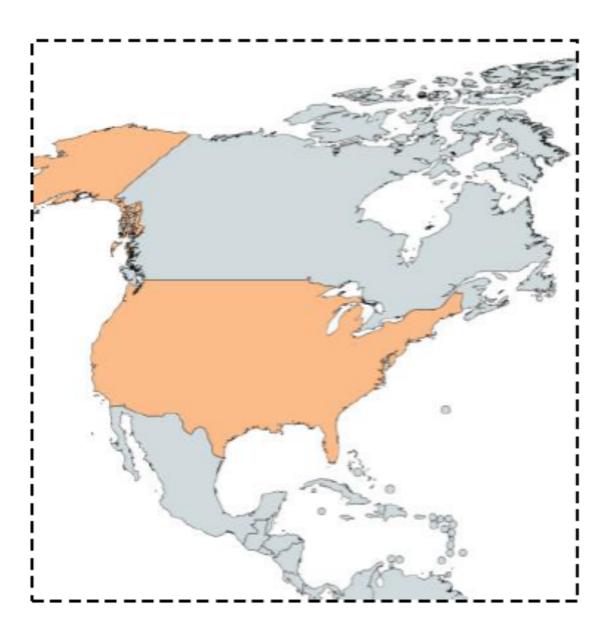
### **EIRENE RI**

E	Top-down	
Exposomics (epi) Meta Markers of M exposure sus	<b>exposomics</b> Environmental samples and data (air, water, food, consumer products, indoor)	Monitoring networks ACTRIS RI ICOS ERIC METROFOOD
	Bottom-up	
Targeted Confirmatory, quantitati data, robustness	<b>exposomics</b> Human cohorts, biomarkers and health outcomes, socio-economic and	Biobanks, clinical and epi studies BBMRI ERIC ECRIN ERIC
Complementary r to be used on human, er	psychological factors, life style, diet	
Lab inventories, sample	of cohorts, networks, data	Inventories o
Data		
Methodological harmonization, (		





### **Geographical coverage**

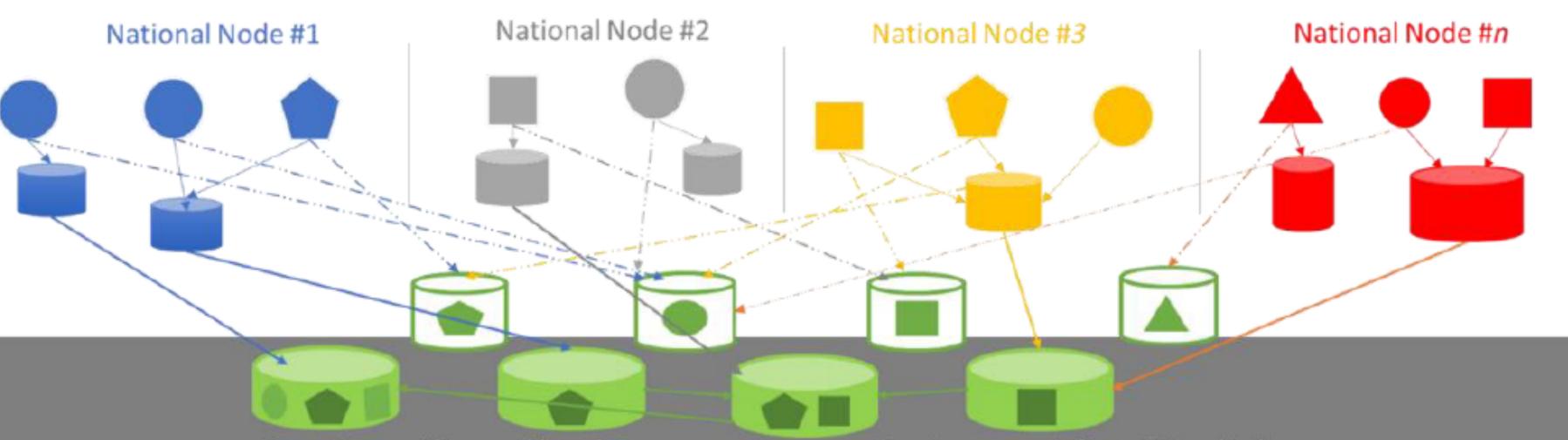


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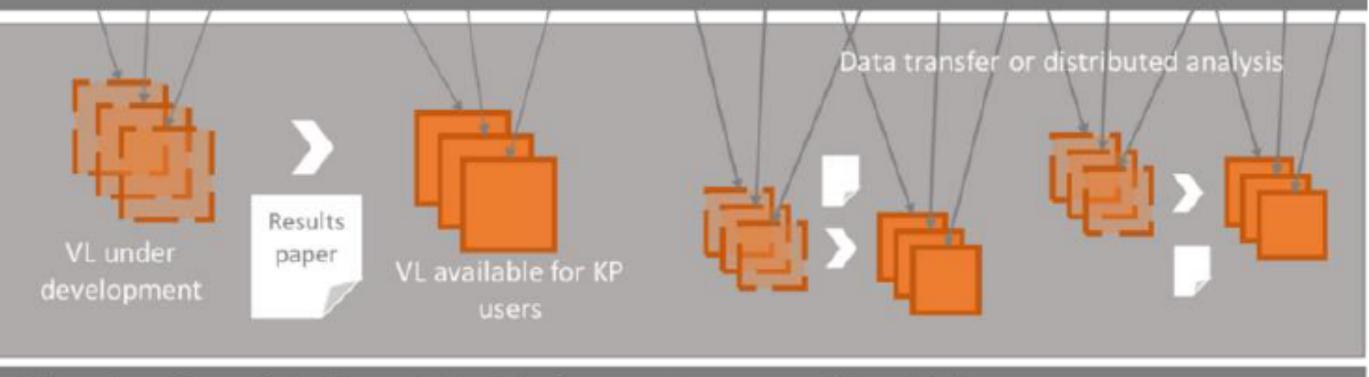


# Layers of exposome data, Knowledge platform and Virtual Labs



Domain specific or *ad hoc* data aggregation according to requests from Virtual Labs Data from local/national storages can be copied to one place if needed for the data analysis and processing

Virtual Laboratories at Knowledge Platform distributed infrastructure for data analysis



Graphical User Interface of the Knowledge Platform and access to Virtual Labs



## Thank you for your attention

