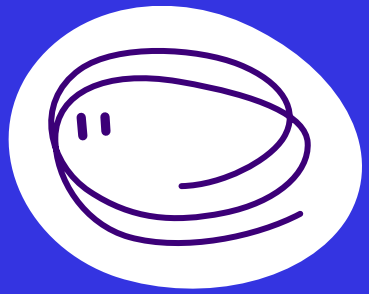
Unlocking the Potential of Data and AI: Building a Smarter Tomorrow



Ott Velsberg
Government Chief Data Officer
7.11.2023

MAJANDUS- JA KOMMUNIKATSIOONI-MINISTEERIUM

KRATT
Eesti Tehisintellekt

bürokratt

#eEstonia digital government agenda 2030

OBJECTIVE	Best experience			
LEAPs	Switch to life-event based and proactive services	**AI-powered government**	Human-centric digital government	Green digital government
FOUNDATIONS	Management and user-centricity of public services	**Data-driven governance and reuse of data**	Futureproof digital government platforms	Centrally provided basic IT services
	Systematic experimentation with new ways	**Open innovation and development of govtech community**	Empowering digital change in public sector	Targeted international cooperation

Brief history of Estonian public sector IT: data viewpoint

up to early 2000s

- **development of systems**
- data created by digitisation of paper documents and processes

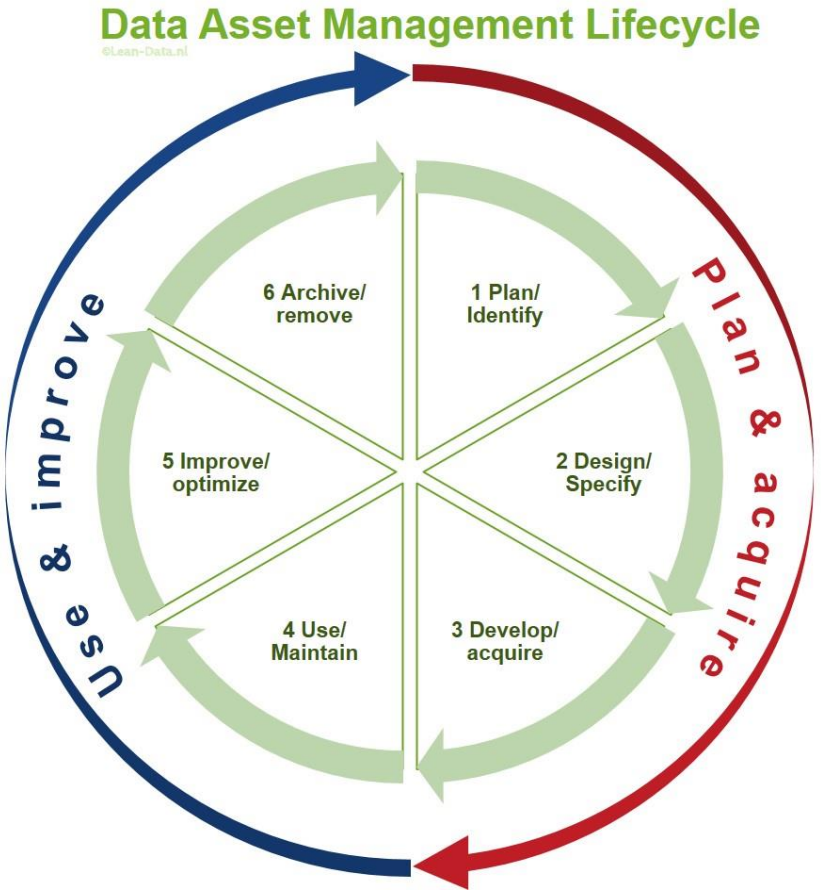
up to mid 2010s

- **delivery of e-services**
- data exists and is managed for the sole purpose of delivering services

from late 2010s

- **„data as an asset“ mindset**
- data has value also outside of initial systems and services

Data as an asset

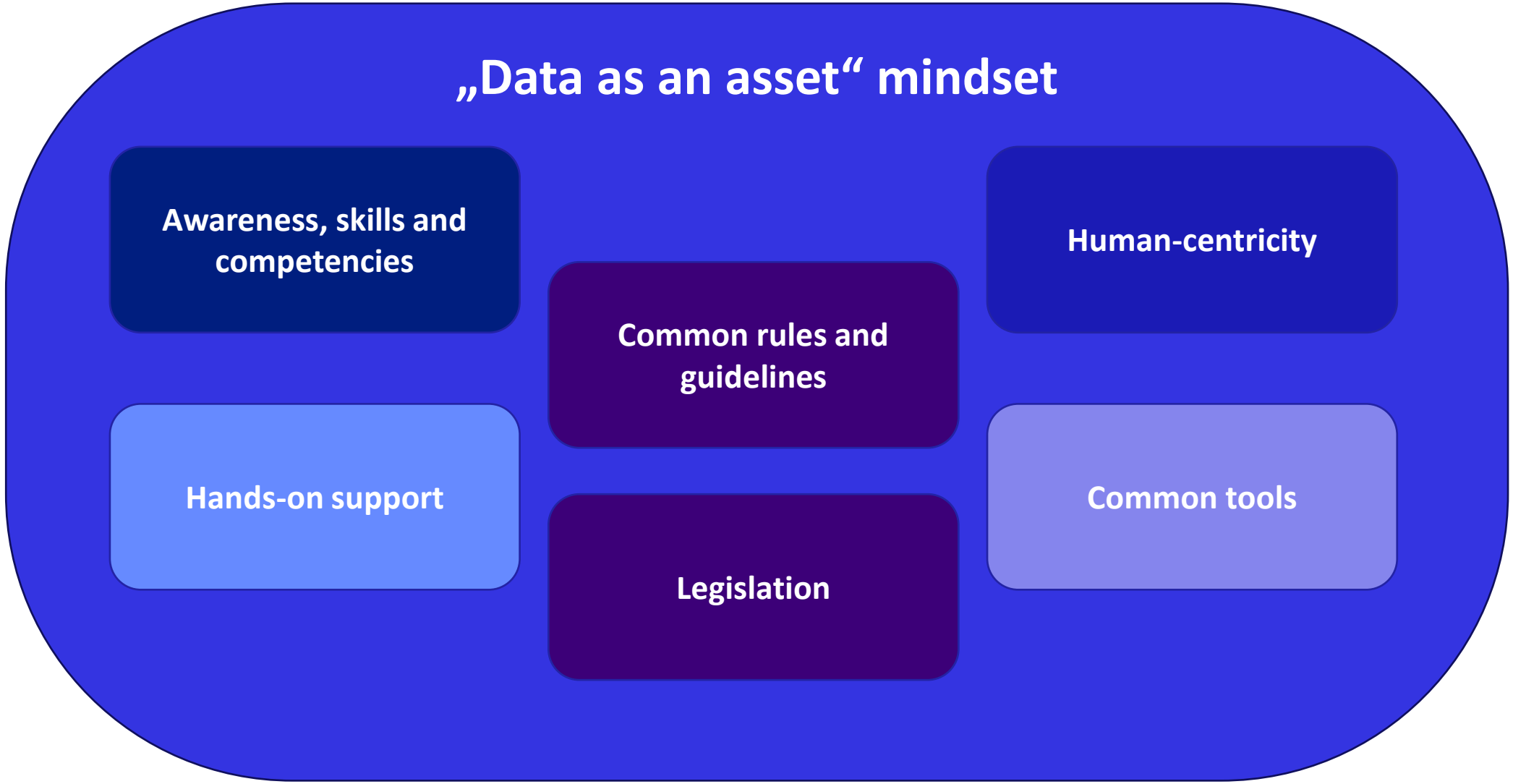


„Asset“ as in something valuable

+ Clear definition of data value
+ Value-driven prioritisation of data governance activities

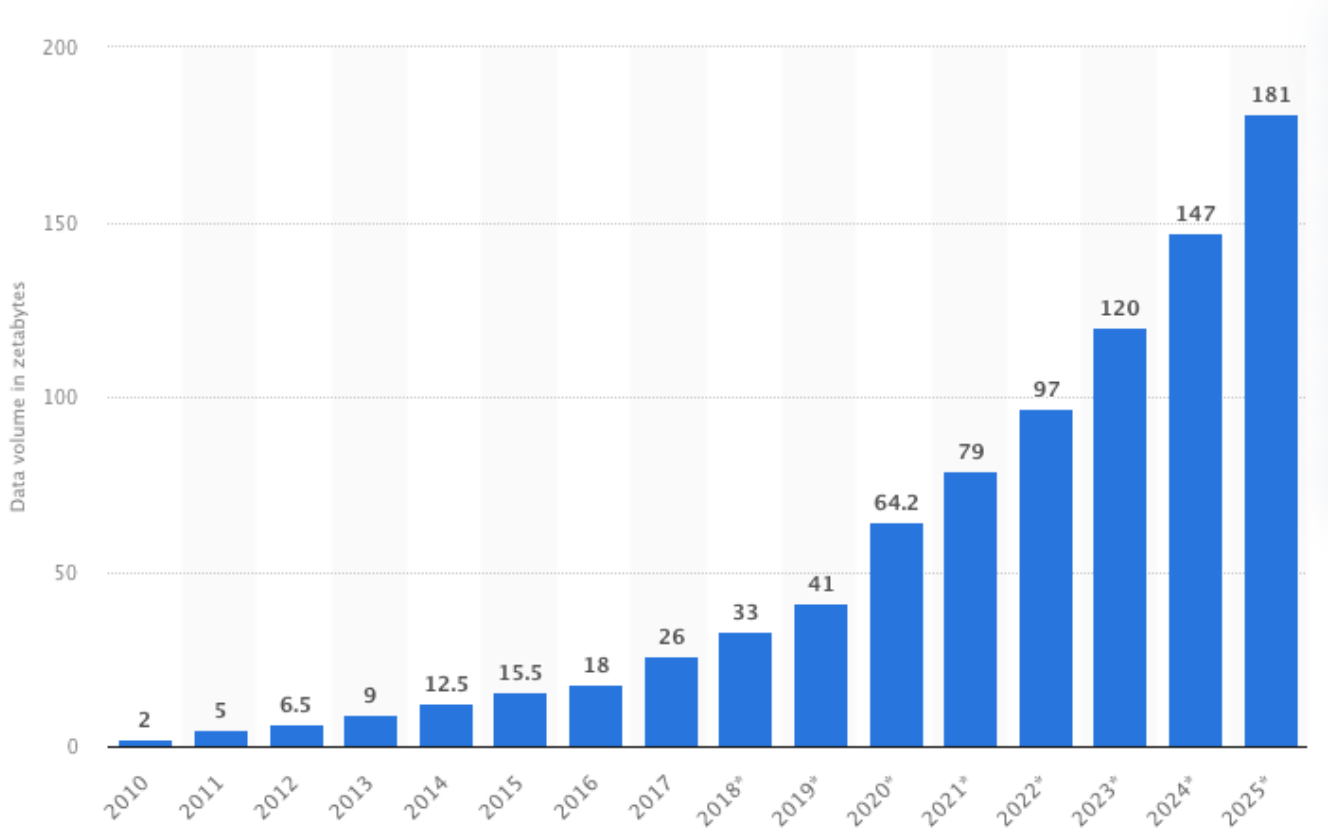
„Asset“ as in a product that we manage and offer

+ clearly defined steward
+ defined and delivered according to users’ needs
+ constantly maintained and updated
+ offered together with relevant guidance, support and documentation


„Data as an asset“ mindset
Awareness, skills and competencies
Human-centricity
Common rules and guidelines
Hands-on support
Common tools
Legislation

Why is data important?

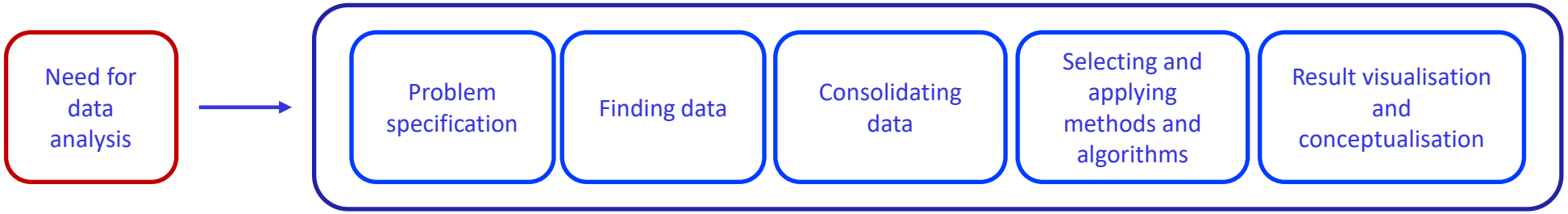
- European Union data economy atleast **€829 billion by 2025**
- **Estonia has highest data economy in Europe** (10,5% GDP)
- €1.3 triljon in savings in manufacturing by 2027
- Saving of €120 billion a year in healthcare
- Over 500 million jobs will be replaced
- …



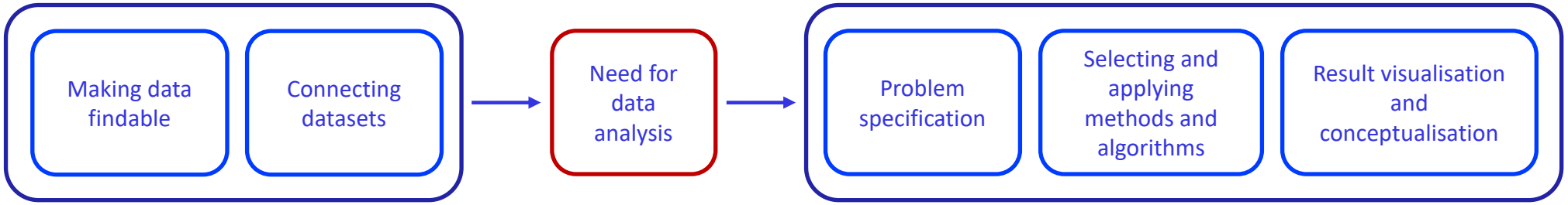
https://www.statista.com/statistics/871513/worldwide-data-created

Data-driven decision making

AS-IS

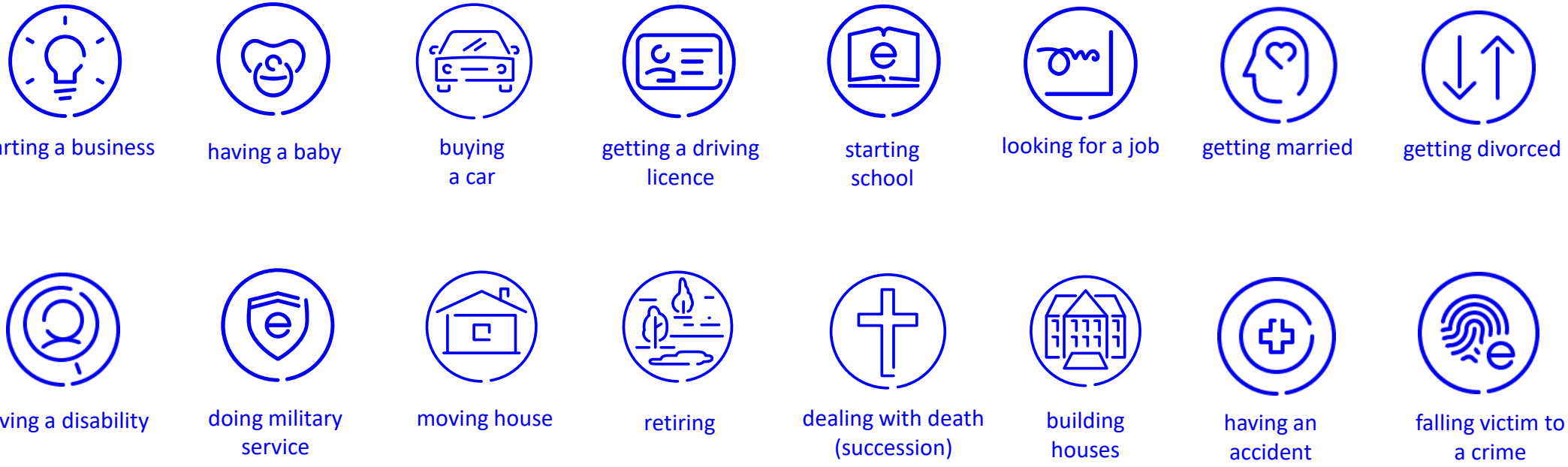


TO-BE (ALTERNATIVE APPROACH)



Proactive digital government

Goal: seamless public services based on life events



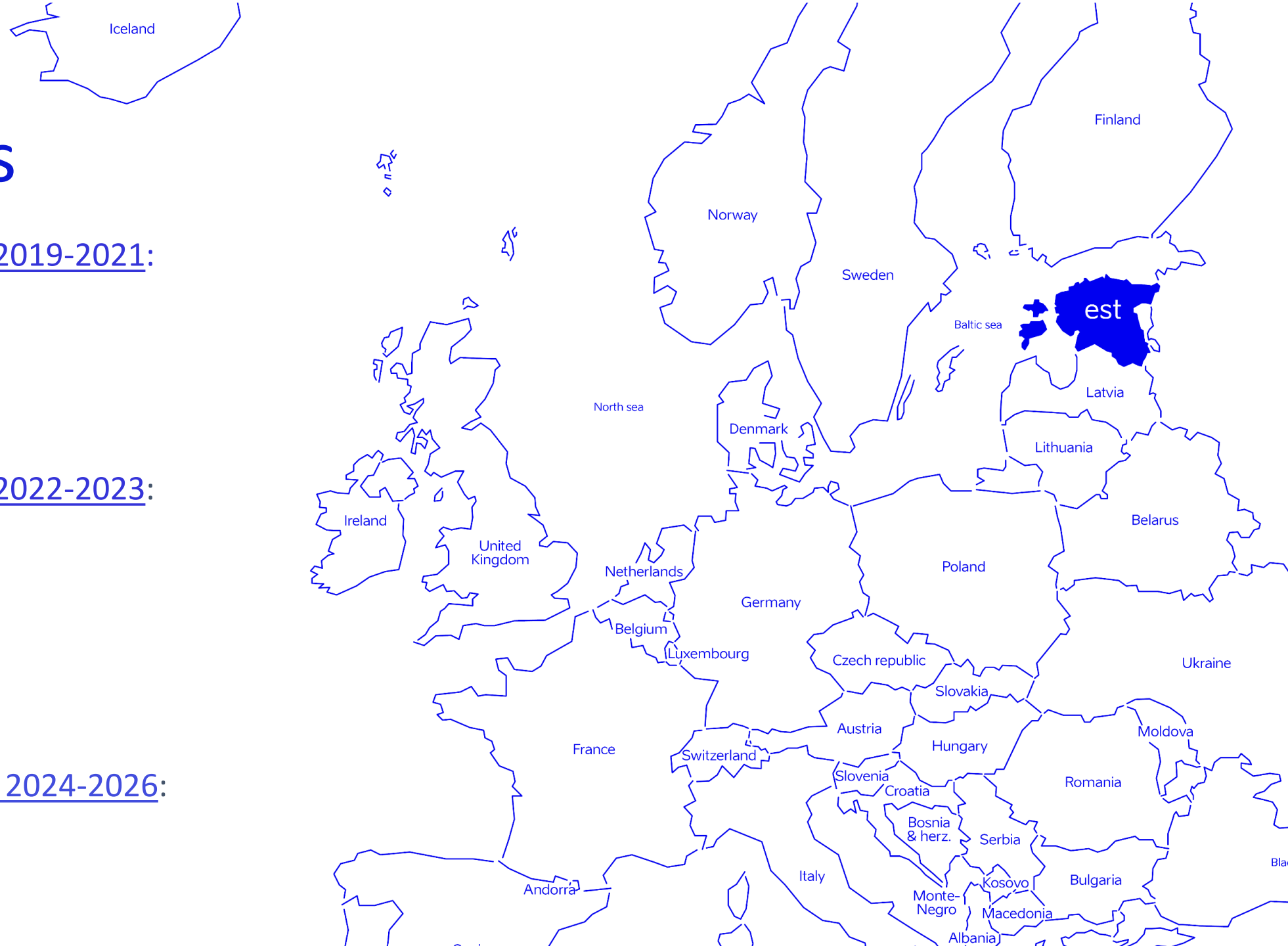
#kratt
© Anneli Arusaar

AI strategies

[National AI strategy for 2019-2021]:
- public sector
- private sector
- legal system
- education+R&D

[National AI strategy for 2022-2023]:
- public sector
- private sector
- legal system
- education+R&D
- data as an enabler

[National AI strategy for 2024-2026]:
- collaboration
- reusability…



Kratt in e-government

Number of use-cases

130+

Reusable AI components
koodivaramu.eesti.ee

40+

Number of organizations

60+

Fully automated processes

0

There are no fully automated processes!

AI use-cases

Identifying residential buildings that are fire hazards

The Rescue Board

Training / internships, etc. impact on employment and wages

Unemployment agency

AI solution for opitimizing teaching

Ministry of Education

Customer call analysis

SKA, Unemployment Insurance Fund, Statistics Estonia, Health Insurance Fund and others.

Controlling the names of medicines

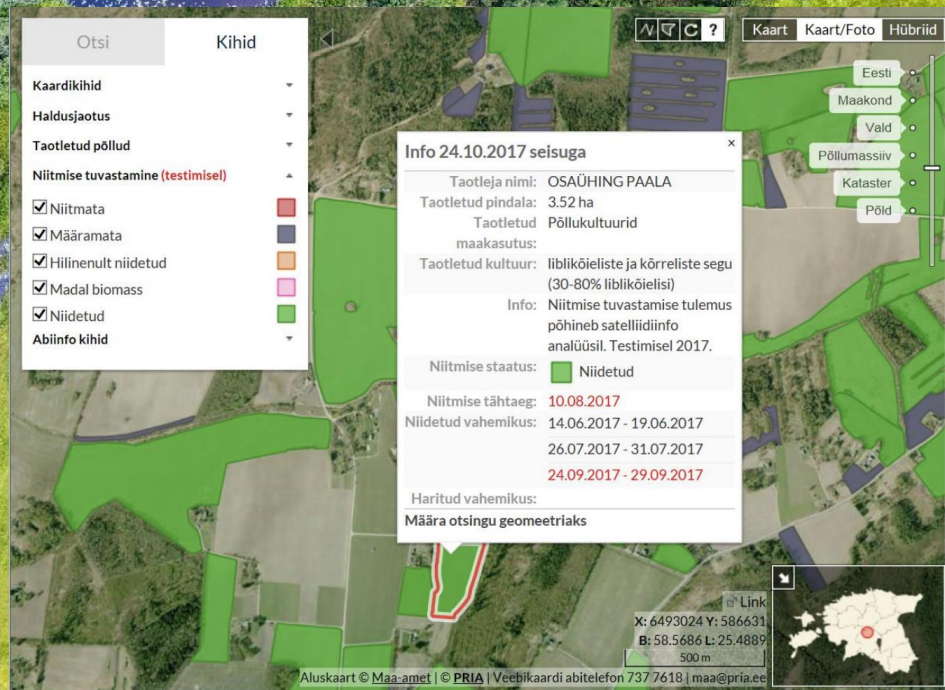
State Agency of Medicines

Identification of clear-cutting, height, tree species, crops

ENVIR, KEMIT, MEM jt

Agriculture satellite image analysis

- Detection of cutting hay
- No need for on-site inspections



Traffic accident prediction

AI-powered government focus areas

Area	Technology				Competences and skills	Legislation and ethics	Data as an enabler
	Bürokratt	Natural Language Technology	AI	*Core components (BükStack)*			
Objective	National virtual assistant based on artificial intelligence – an assistent in every area of life	Core reusable language technology components and language models - we ensure the sustainability of Estonian language technology	We help to reorganize the work of organizations with the help of artificial intelligence, supporting adoption through the AI support toolbox and central components	Reusable core components for service development - personal services and human empowerment	We ensure competencies and raise awareness of sustainable and reliable artificial intelligence development, implementation and procurement.	We regulate the human-centric and trustworthy development and use of artificial intelligence, ensure opportunities for issuing automatic administrative acts	We support institutions to disclose open data and ensure data reusability, improve the findability and use of data in a way that protects privacy, ensure efficient data governance and data quality

Reusable core components

Bürokratt in a nutshell

Bürokratt is the vision of how digital public services should work in the age of artificial intelligence (AI)

All government services and information available from one place via virtual assistants:

- by voice
- in Estonian language (+ more)
- in any most common device and channel
- proactively
- open-source and free
- Personalized services (both public- and private sector)

Examples of projects from AI support toolbox

Snow AI

Measuring snow cover and snow layer thickness in weather stations using machine vision to save time and money and collect data on which to develop new forecasting models.

Environment Agency

Energy efficiency of buildings

Analysis and monitoring of energy consumption of city-owned buildings. The goal of the project is energy savings and input for management and investment decisions.

City of Tallinn

Bürokratt integration

Integrating the Bürokratt into the created self-service environment makes it possible to make the provision of user support faster and more efficient. Simpler appeals are handled by Bürokratt, more complex ones by a help desk employee.

Estonian IT Centre

Faster information retrieval

Creating institution's own "ChatGPT" trained on internal documents

Ministry of Foreign Affairs

Tartu vAIm

Increasing road safety, reducing the amount of man-hours, saving the environment and saving money. Streamlining supervision operations through faster resolution of appeals.

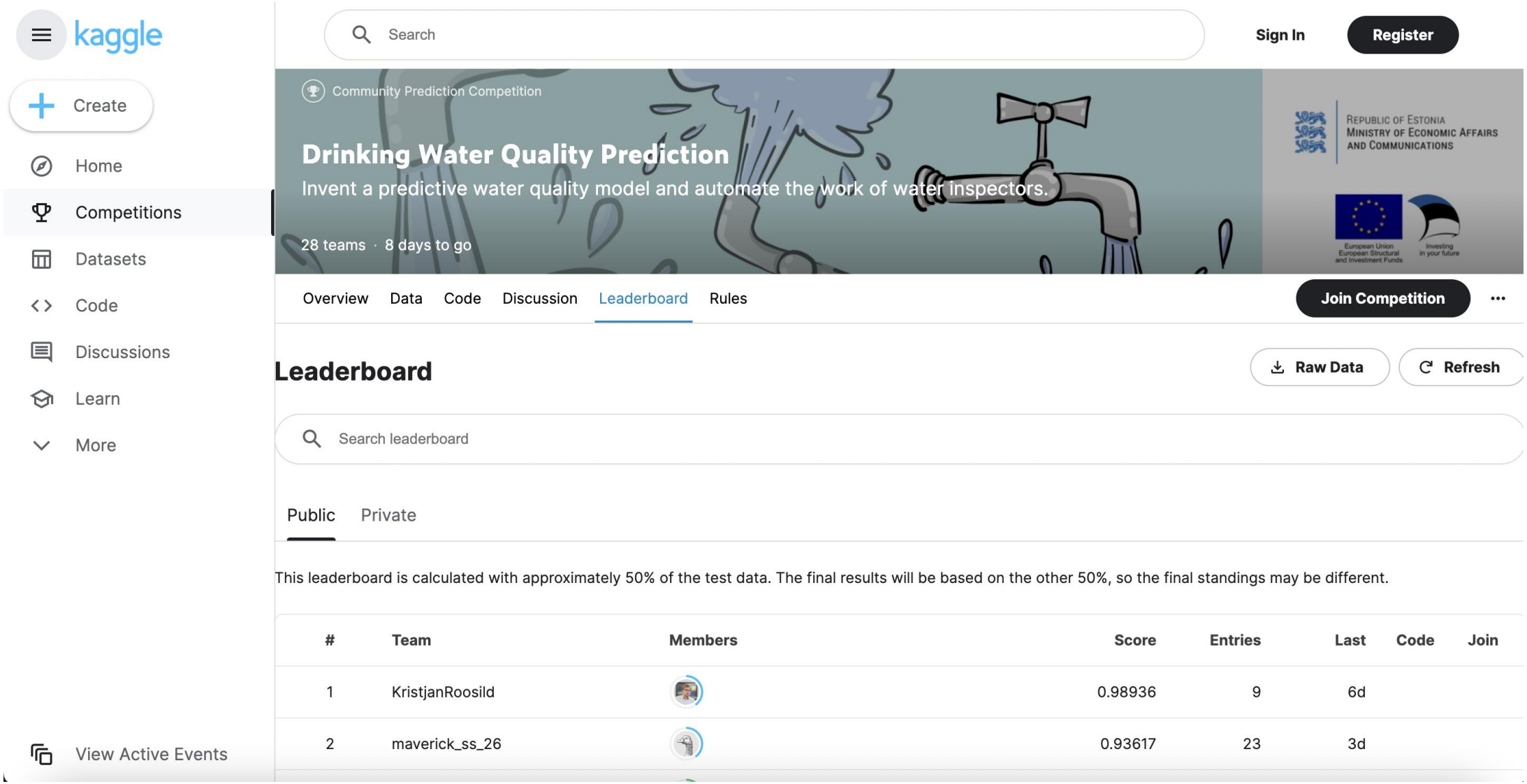
City of Tartu

Training object recognition through machine vision

Identifying objects from orthophotos using machine vision saves time and money and keeps map layers as up-to-date as possible.

Land Board

New ways of collaboration – Estonia as a testbed



Common rules and guidelines

Clear ownership

and

community-driven development

Citizen-centric data governance

Requirements

+ Monitoring the use of personal data
+ Requirements on data management
+ Privacy impact assessment
+ Privacy-by-design

Solutions

+ PET
+ Synthetic data
+ Data tracker
+ Consent service
+ Anonymization
+ Data science environment

Support

+ AI and analytics sandbox
+ Data and AI panel
+ Up- and re-skilling
+ Data literacy
+ Experience sharing

Impact assessment toolset

+ Principles of responsible data processing
+ Algorithm Impact Assessment Methodology

Data tracker

The Personal Data Usage Monitor allows you to see when your personal data is processed in the state's databases. The Personal Data Usage Monitor shows both operations within the databases and situations where a third party is granted access to your personal data. To see an overview, please choose the database you wish to see from the drop-down menu.

NB! If there is a company registry code instead of a company name in the 'Query performed by' column, then in order to find out the company name, please make a query with the registry code at the e-Business Register

Please choose an information system

Information system: Population Register

Open filter

Date	Query performed by	Query name
20.09.2023 17:37	Riigiportaal: 39012205718	Kodaniku isikuandmete ja/või laste andmete päring iseenda kohta eesti.ee-s
20.09.2023 17:37	Riigiportaal: 39012205718	Kodaniku isikuandmete ja/või laste andmete päring iseenda kohta eesti.ee-s
20.09.2023 17:37	Riigiportaal: 39012205718	Kodaniku isikuandmete ja/või laste andmete päring iseenda kohta eesti.ee-s
20.09.2023 17:37	Riigiportaal: 39012205718	Kodaniku isikuandmete ja/või laste andmete päring iseenda kohta eesti.ee-s
20.09.2023 17:37	Riigiportaal: 39012205718	KODANIKU PÄRING ISEENDA KOHTA RAHVASTIKUREGISTRIST
06.09.2023 11:23	TERVISEKASSA	ISIKU LAIENDATUD INFO PÄRING ISIKUKOODI JÄRGI
29.08.2023 08:40	RIDANGO AS	pilet.ee

lessons learned

be boldest

+ **Community driven approach**
+ **Reusability**
+ **Practical cooperation**
+ **Democratization of AI**
+ **Keep it simple!**

© Johannes Arro

Let’s put data and AI to work!

Let's connect!

ott.velsberg@mkm.ee