Estonian Address Data System in 2023

Andre Kaptein

Estonian Land Board / Advisor

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Address Data System (ADS)

- is a framework of **organizational**, **technical** and **legal means** that

  - ensures a uniform identification of address objects both in their location and in different data sets (registers),

  - and a uniform organization of place-address assignment and address data processing.

Address Data

The Estonian Address Data System (ADS) contains

- addresses of cadastral parcels,

- buildings and parts of the building
  (*with house/apartment numbers and/or place names, etc.*),

- addresses of address objects that are used for addressing
  (*e.g. thoroughfare, settlement units, municipalities and counties*).

ADS

ADS is a **support system** for maintenance of Estonian State Information System.

ADS consists of a central technological solution (ADS administration system) **including**
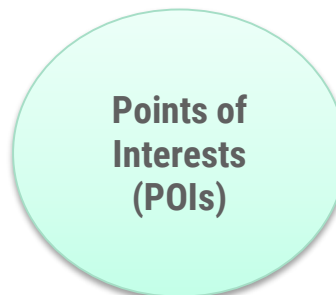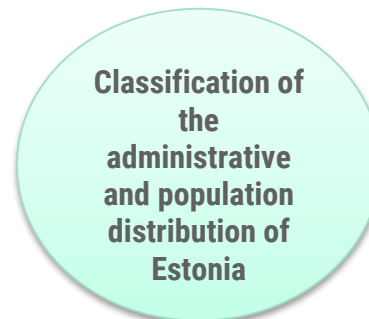
- interfaces for processing address data and providing address services and

- databases processing address data.

All ADS data is open data.

Systems that keep address objects

Land Cadastre

National building register

Systems that give significant contribution to ADS

National Place Names Register

Classification of the administrative and population distribution of Estonia

Points of Interests (POIs)

Estonian topography database

ADS

CENTRAL SYSTEM TO ENSURE UNITY

Systems that connect subjects with addresses

Population Register

Land Register

Business Register

100+

Private sector consumers

X-TEE or Palveluväylä
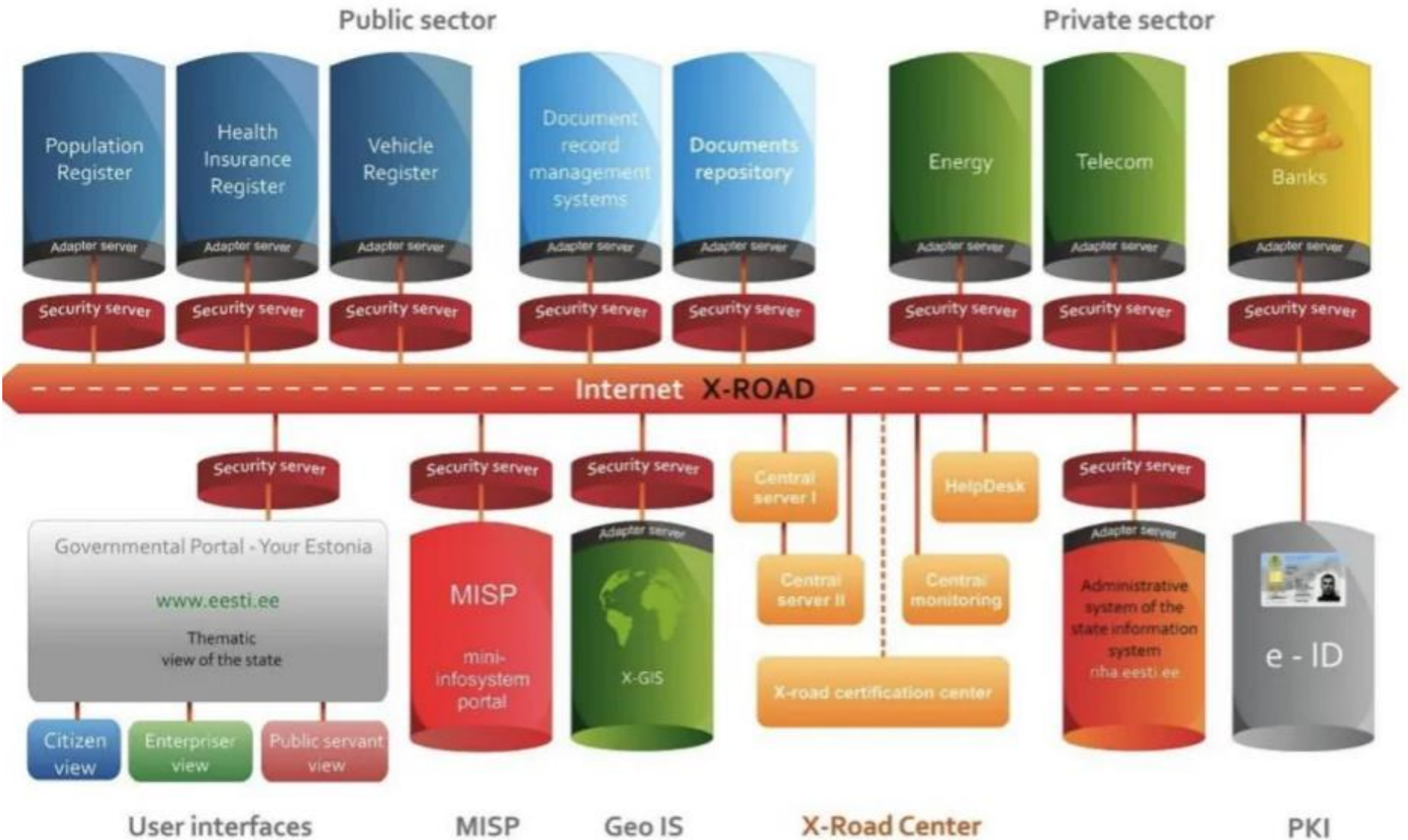
Local Government

The setter *(enforcers, changers and cancelers)* of place-addresses

Address Data System

Private and public sector registries and information systems that consume address data

for example: Population Register, Business Register, Land Register, Agricultural Registers and Information Board, Traffic Register, Estonian Rescue Board, Emergency Response Centre, registers of local governments, Omniva, Eesti Energia, Telia, Elisa, Eesti Gaas etc.

National building register

Buildings

Parts of the building (dwellings and parts of buildings not directly intended for living)

Estonian topography database (ETAK)

National Place Names Register

Place names

Land cadastre

Cadastral parcels

Administrative units

Settlement units

The Environmental Portal

Water bodies

The Road Register

National roads

Local roads

Private roads

Forest roads

National Public Transport Register (ÜTRIS)

Stop names of public transport

The State Port Register

Ports

County

Municipality

Settlement unit / City district

Address area

Thoroughfare

Address object name

Address number

Building part number

Level 1

Level 2

Level 3

Administrative and settlement division

Level 4

Level 5

Level 6

Proximate address

Level 7

Level 8

Sarvesoo

Loodelaht

Kadakasaar

Roojõgi

Pillijärv

5

3

1

4

2

1

Oru park

Oru mõis

Roo tee

2
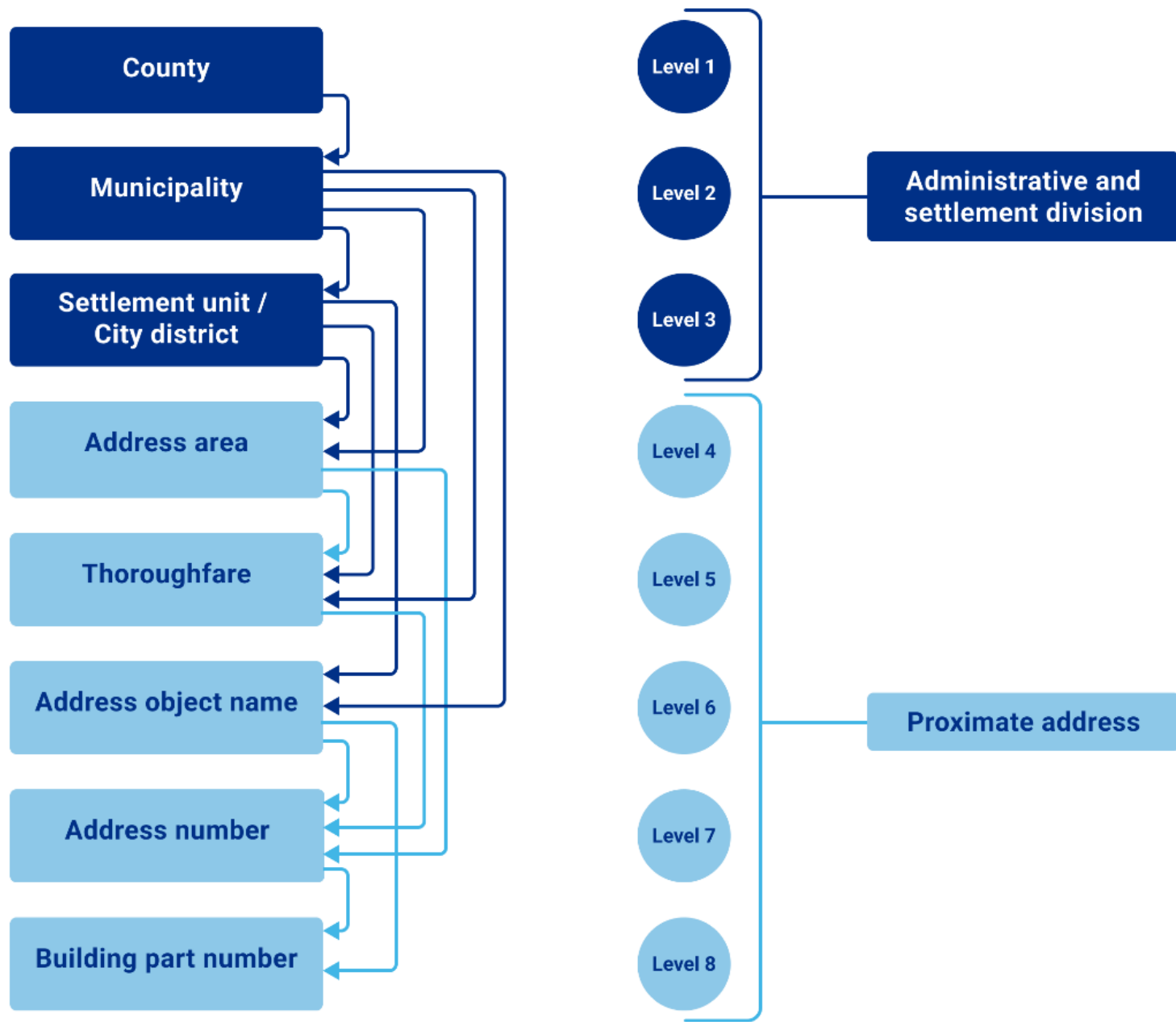
1 Geographical address of cadastral parcel: Maasika maakond, Mäe vald, Naeru küla, Roo tee 2

This address includes the following components:
- Maasika maakond *(county)*
- Mäe vald *(municipality)*
- Naeru küla *(settlement unit)*
- Roo tee *(thoroughfare)*

2 Geographical address of cadastral parcel: Maasika maakond, Mäe vald, Naeru küla, Oru mõis

This address includes the following components:
- Maasika maakond *(county)*
- Mäe vald *(municipality)*
- Naeru küla *(settlement unit)*
- Oru mõis *(address object name)*

Address objects in ADS

Object	Code	Number of objects
Cadastral parcel	CU	~765 000
Residential building	EE	~304 000
Non-Residential building	ME	~684 000
Dwelling / flat	ER	~555 000
Other part of building	MR	~67 000
TOTAL		**~2 375 000**

The beginning 1

- At first there was only address data from Land Cadastre and National building register (EHR).

- The aim was to combine the data from these two registers together.

- The problem was that only 8% of buildings in National building register (EHR) had spatial data.

The beginning 2

- For census of population Statistics Estonia initiated a project (AKP) to add addresses for all the buildings and apartments to ADS. Spatial data of buildings from topographical data (ETAK, mapped from ortophotos).

- Services to get the data was bought from two private sector companies: Eesti Post AS (postal services) and Regio OÜ (map services).

- The aim was to gather all the available data to ADS, so then ADS could start building the quality of the data from there.

API for processing address data

- Application launched in **2012**. Constantly further developed and modified.

- Addresses are created directly by local authorities.

- No address object can be registered without first entering its address to ADS.

- Addresses are verified through business rules before gaining official status.

- No address is valid before being registered in ADS.

Funding for data quality improvement

- <u>To improve data quality</u> total 2 mln € was given from the Ownership reform reserve fund of Government of Republic

- Quality improvement projects from July 2013 – November 2021

- Task for local governments

- Different tariffs meant to compensate labour costs of local governments

Data quality improvement

Data quality improvement includes:

- **constant quality control** to ensure that new addresses and objects meet requirements,

- **regular quality works** by Land Board,

- **daily communication** between local governments and Land Board,

- communication between local governments and residents and landowners,

- **regular data synchronicity controls** between main registers and ADS.

Administrative-Territorial Reform

- In 2017. Mostly mergers of local authorities *(number of municipalities decreased from 213 to 79).*

- Massive changes in addresses

- Everything went well!

- Important to use ADS to update address data.

Data quality improvement / developments

- **Postal codes** where added to ADS (2019)

- **Unofficial areas** (city neighbourhoods) were added to ADS

- **Points of interest** (POI) are being added to ADS (started in 2020)

- An ongoing project for the development of the **address data and place names system**

In some cases, addresses are essential.

If you don't care where you are, you cannot get lost.

Future plans - AKS

Combines 3 existing registers:

- **A**ddress Data **S**ystem
- **Place Names Register (*Kohanimeregister*)**
- **Points of Interest**

AKS - Address data and place names system

Reasons:

- **Current Place Names Register very outdated**
- **To stop using Oracle as platform for ADS**
- **To give legal status to collection of POI-s**

Currently in business analysis (finished in 3-4 months). Development in stages for next 3-4 years.

POI

- At the moment mainly collected by Geoinformatics department from different state registers

- Mainly used by Rescue Department (to find correct locations of incidents).

- Some POI objects used in ADS and public address searches (also in In-ADS) as well − **16 473** POI objects.

- Total in POI system **84 325** POI objects.

POI

Tüüp	Type name	Count
huvikool	interest school	2329
mõisa asukoht	location of manor	1474
välispalliväljak	sports field	1172
võimla, spordihall, spordisaal	sport hall	895
koolieelne lasteasutus	kindergarten	786
muu vabas õhus asuv spordiobjekt	outside sports object	681
mõisa peahoone	main building of manor house	626
põhikool või gümnaasium	schools	620
kirik	churches	563
raamatukogu	library	547

POI (technical objects, or low data quality, only in POI)

Tüüp	Type name	Count
hüdrant	fire hydrant	17 008
bussipeatus	bus stop	15 203
sild	bridge	2 524
veevõtukoht	water extraction site	2 110
kauplus	shop	1 817
määratlemata	unspecified	1 473
järv	lake	1 356
täienduskoolitusasutus	Institution offering trainings	1 287
sidemast	communication mast	1 194
parkla	parking lot	1 117
oja	creek	1 000

KNR – Place names register

- Mainly objects connected with nature and land.

- Total **352 546** objects (without cadastral parcels with name – **69 683** place name objects.

- Some objects used in POI data as well (for example public transportion stops).

- Needs development first, as technical infrastructure is outdated.

- Gives street names and address area names data to ADS.

KNR

Tüüp	Type name	Count
liikluspind	street name (used in addresses)	17896
tee, ringtee ...	road name	8373
Bussi–, trammi–, trolli–, taksopeatus	public transportation stop	8321
mägi, oos, voor, rannavall, luide	montain, hill	4617
küla	village	4481
järvistu, järv, lais, laugas	lake	3201
soo (soostik, soo, raba, soo–osa)	swamp, bog	1673
matmispaik (kalmistu, surnuaed, üksikhaud...)	cemetery	1530
tehisveekogu (veehoidla, paisjärv, tiik)	artificial water body	1478
puittaimestikuga ala (mets, puisniit)	forest	1396

ADS ettepanekud AVALIK_NIMI, AVALIK_ALIAS ja
ADS_YLEVAATUS osas

Muudatuslogi
teenus

POI

Muudatuslogi
teenus

Andmed, mis on määratud ADS-huviga, sh
KNR-ist tulnud hoone nimed (**umbes 20 000
objekti**)

ADS
POI ID ja tüübigrupp (andmed POI-st
või POI kaudu KNR-ist pärit)
KNR ID ja liik (ehk otse KNR-ist pärit MA
piirkonna andmed, hallatakse KNR-is)
Saab hallata ADS huviga POI
andmeid (v.a nimelised hooned, mida
hallatakse KNR-is)

Hoonete nimed
50013 kinnismälestis (nt kirik, kalmistu, park) 306 tk
50101 hoone (nt kirik, tall, kõrts jt) 72 tk
KNR-ist liigub POI-sse ka hulk loodusnimesid, mis sinna
jäävadki ja edasi ADS-i ei liigu

MA piirkonnad 1, 2 ja 3
(mitteametlikud
linnaosad, asumid,
kvartalid, väikesaared ja
osavallad?)

X-tee teenus

X-tee teenus

In-ADS

KOHU
POI ja KNR-i andmed

KNR

X-tee teenus

Umbes 35 000 objekti: 10301 endisaegne haldusüksus või kultuuriline üksus 124; 10302 paik, paikkond 182; 10305 rahvuspark 1; 10306 looduskaitseala (kaitseala, hoiuala) 15; 10307 maastikukaitseala, loodusprak 7; 10314 mitteametlik asumiala 36; 20101 kõrgustik, mõhnastik, voorestik, luidestik 41; **20102 mägi, oos, voor, rannavall, luide 4283;** 20201 org, ürgorg, nõgu, lohk 679; **20301 järsak, pank, kallas, astang, nõlv 212;** 20401 tasandik, madalik, lavamaa, platoo 1; 20501 karst, kurisu, koobas 54; **20601 maastiku üksikelement (rändrahn, kivi, kivikülv) 145;** 20602 kaitstav looduse üksikobjekt (puu...) 1087; 30101 meri 1; **30102 laht 445; 30103 väin, kurk 49; 30104 madal, kari, rahu, kuiv 237; 30201 järvistu, järv, lais,** **järvesopp, laugas 1518;** 30202 tehisveekogu (veehoidla, paisjärv, tiik) 905; **30301 jõgi 367; 30302 oja 1193;** 30303 tehisveejuhe (kanal, peakraav, kraav) 978; **30304 muu (juga, kosk, kärestik, allikas) 25; 30306 allikas 593; 30401 saarestik, saar, laid, kare, maa, rahu 843;** 30402 poolsaar 108; 30403 neem, nina, nukk, ots 753; 30404 säär, maakitsus 77; **30405 tehissaar 4; 30406 asustatud väikesaar 30;** 40001 puittaimestikuga ala (mets, puisniit) 1284; 40002 avamaastik 775; **40003 soo (soostik, soo, raba, soo-osa) 1411; 40004 soosaar 441; 40005 loodusliku taimkatteta ala (rand, liivik, ...) 131; 40006** **looduse üksikobjekt 21; 40007 park 205; 40008 linnamets 19;** 40009 supelrand 9; 40010 haljasala 20; 40011 paik, paigas, maastik 7; 50002 tehniline rajatis (torn, mast, ...) 1; 50005 kultuurilooline ja arheoloogiline ala 264; 50006 põllumajandusala 56; 50009 matmispaik (kalmistu, surnuaed, üksikhaud...) 1557; 50011 mälestusmärk 2; 50012 maardla 2; 50014 raadiosidemast (raadiomast) 0; 50102 tehniline rajatis 5; 50201 tööstus- ja äriala 1; 50301 ühiskondlik ala 28; 50301 ühiskondlik ala 28; **60106 bussi-, trammi-, trolli-, taksopeatus 11464; 60113 sild 881;** 60202 muu raudteetransprodiobjekt 163; **60203 rongipeatus 142; 60301 sadam, lauter, valgma, ... 248;** 60302 meremärk (majakas, tuletorn, paak) 45; 60303 sadama akvatooriumiobjekt 5; 60401 lennuväli 14. Mitteametlikud linnaosad, asumid, kvartalid, väikesaared ja osavallad liiguvad ka pindobjektidena otse KOHU-sse.

Currently very complex data exchange between 3 systems + In-ADS (public ADS data).

LAK project

- **L**igipääsu**a**ndmete **k**ogumine. Collecting entrance point locations and types.

- Where the entrance to a certain appartment is located.

- Where the entrances to public buildings are located.

- What type and how accessible the entrance is for less mobile citizens (for example disabled persons).

LAK project 2

- Coordinated by Republic of Estonia Government Office.

- Idea accelerator for increasing innovation capacity in the public sector – MOVABILITY. EU funding.

- Only to create the ideas, mechanisms and systems for data collection.

- Real data collection only in some pilot areas (1-2 city districts in different parts of Estonia and 1 rural municipality)

- In partnership with postal and telecom companies (private sector), local municipalities and IT partner.

- Data will be implemented in AKS.

In-ADS

- Address search API for Estonian Address Data System (In-ADS)

- UI widget that enables address search from Estonian Address Data System. Widget can be easily integrated into every web system.

- Widget can be used as a classical address search bar or by systems that need to find normalized and meeting all ADS requirements addresses with all corresponding meta-information.
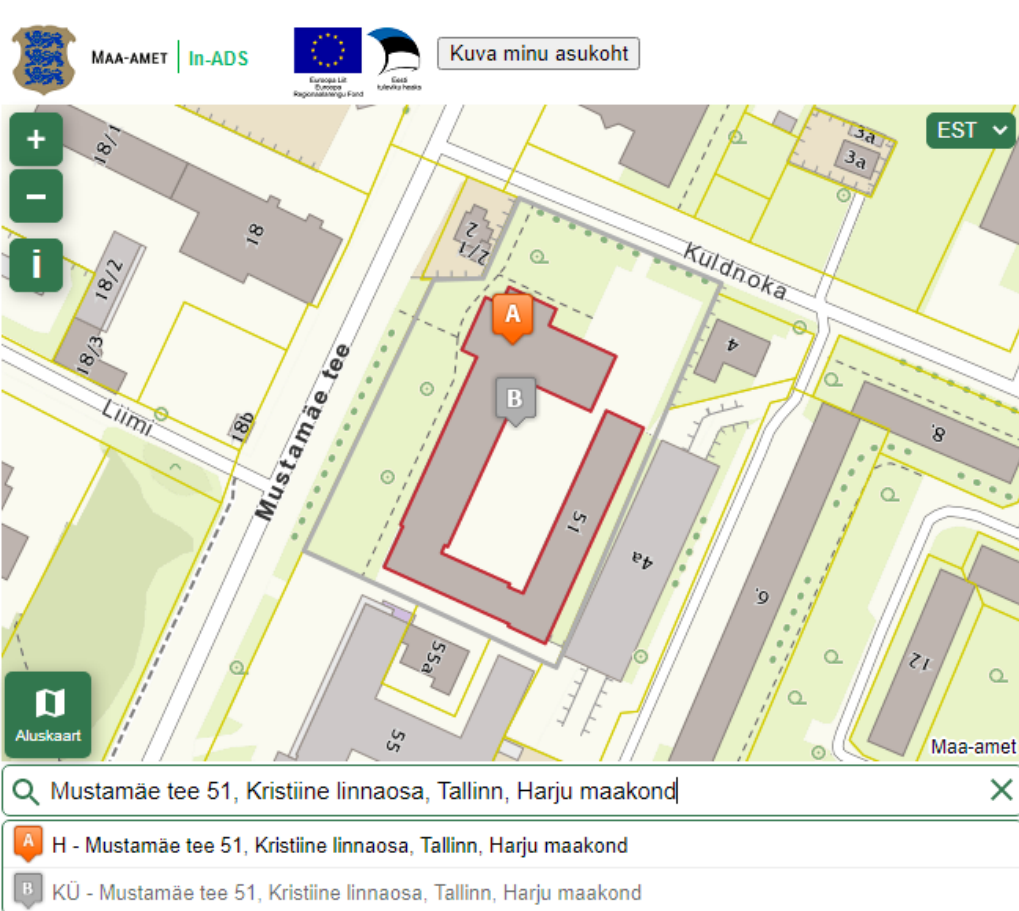
{
  "aadress": "Harju maakond, Tallinn, Kristiine linnaosa, Mustamäe tee 51",
  "paadress": "Mustamäe tee 51, Kristiine linnaosa, Tallinn, Harju maakond",
  "lahiaadress": "Mustamäe tee 51",
  "liik": "ME",
  "orig_tunnus": "120221727",
  "ads_oid": "ME01087725",
  "adob_id": "10439325",
  "adr_id": "2105921",
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  "asustusyksus": "Kristiine linnaosa",
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  "liikluspind": "Mustamäe tee",
  "nimi": "",
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  "un_tunnus": "1",
  "asum": "Lilleküla asum",
  "sihtnumber": "10621",
  "poid": ["Maa-amet"],
  "x": "6587225.42",
  "y": "539625.35",
  "b": "59.421047",
  "l": "24.697966"

- Objects selectable on map

- Java events sent and selected data in JSON format

- Also available as gazetteer-service (via URL)

More information:

Address Data (Land Board website): https://geoportaal.maaamet.ee/eng/Spatial-Data/Address-Data-p313.html

ADS interfacing manual:

https://geoportaal.maaamet.ee/docs/aadress/ADS_interfacing_manual.pdf

Spatial Data Act: https://www.riigiteataja.ee/en/eli/ee/526102020002/consolide/current

Address Data System - Minister of the Environment Regulation No. 32 of July 1, 2021:

https://www.riigiteataja.ee/akt/103122022011

National Place Names Register in English: https://xgis.maaamet.ee/knravalik/knr

Estonian Land Board Geoportal: http://geoportaal.maaamet.ee/eng/

Public Service of the Address Data System: http://xgis.maaamet.ee/adsavalik/ads

Address Data Handbook (*only in Estonian*): http://ads.maaamet.ee/

Data Exchange Layer X-Road: https://www.ria.ee/en/state-information-system/data-exchange-platforms/data-exchange-layer-x-tee

Andre Kaptein
Andre.Kaptein@maaamet.ee