

City of Tallinn's Roadmap to Process Automation and e-Services

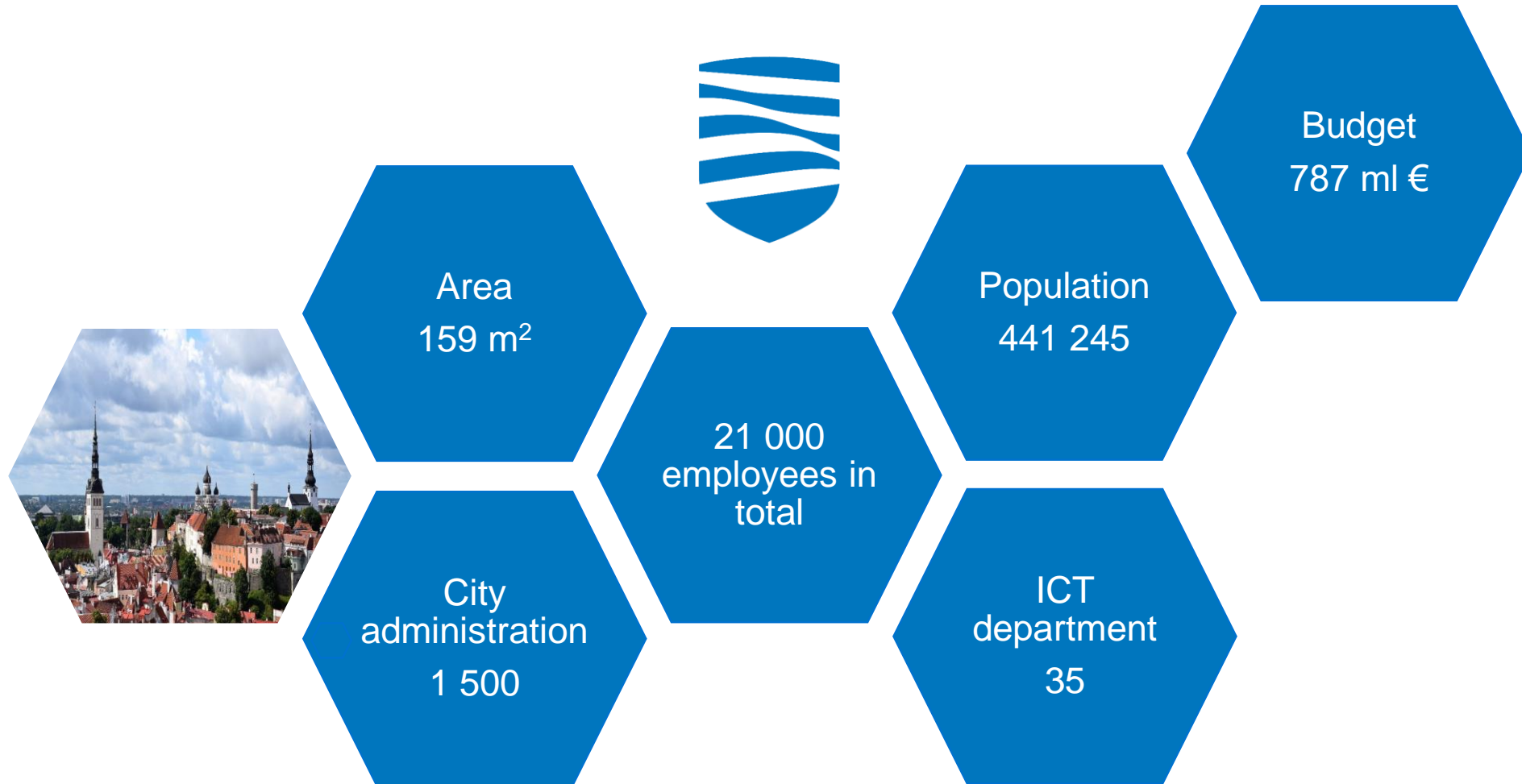


Tallinn

Martin Männil

CIO of the City of Tallinn

City of Tallinn



The most advanced digital society in the world

Source: CNBC

100%
services
described
in online
catalogue

35
information
systems

Almost
100%
paperless

Development principles

- Service design and process analysis
- Legal groundwork, GDPR and open data
- Interoperability
- Minimal data from the end-users
- Secure authentication
- GIS component
- User interface guidelines - UIG

Social transport service information system

- Open 24/7, comfortable and swift channel for people with disabilities to organize their everyday need for transport more efficiently.
- Faster and better planning system for city officials and logistic companies to offer improved service.
- System can be taken into use by all local governments in Estonia.

Service design and process analysis

Process analysis and customer research is the first and most important step

Social transport IS:

- Described customer journeys
- Service process as-is and to-be
- Minimized input from client
- 100% digitalized

Legal groundwork

- RIHA – state and local information systems' catalogue
- Information system statute with detailed system description
- GDPR
- Data security is provided by using compulsory ISKE standards

ID – card

- State issued digital identity
- The chip on the card carries embedded files, and using 2048-bit public key encryption, it can be used as definitive proof of ID in electronic environment
- Mobile-ID allows people to utilize a mobile phone as a form of secure digital ID

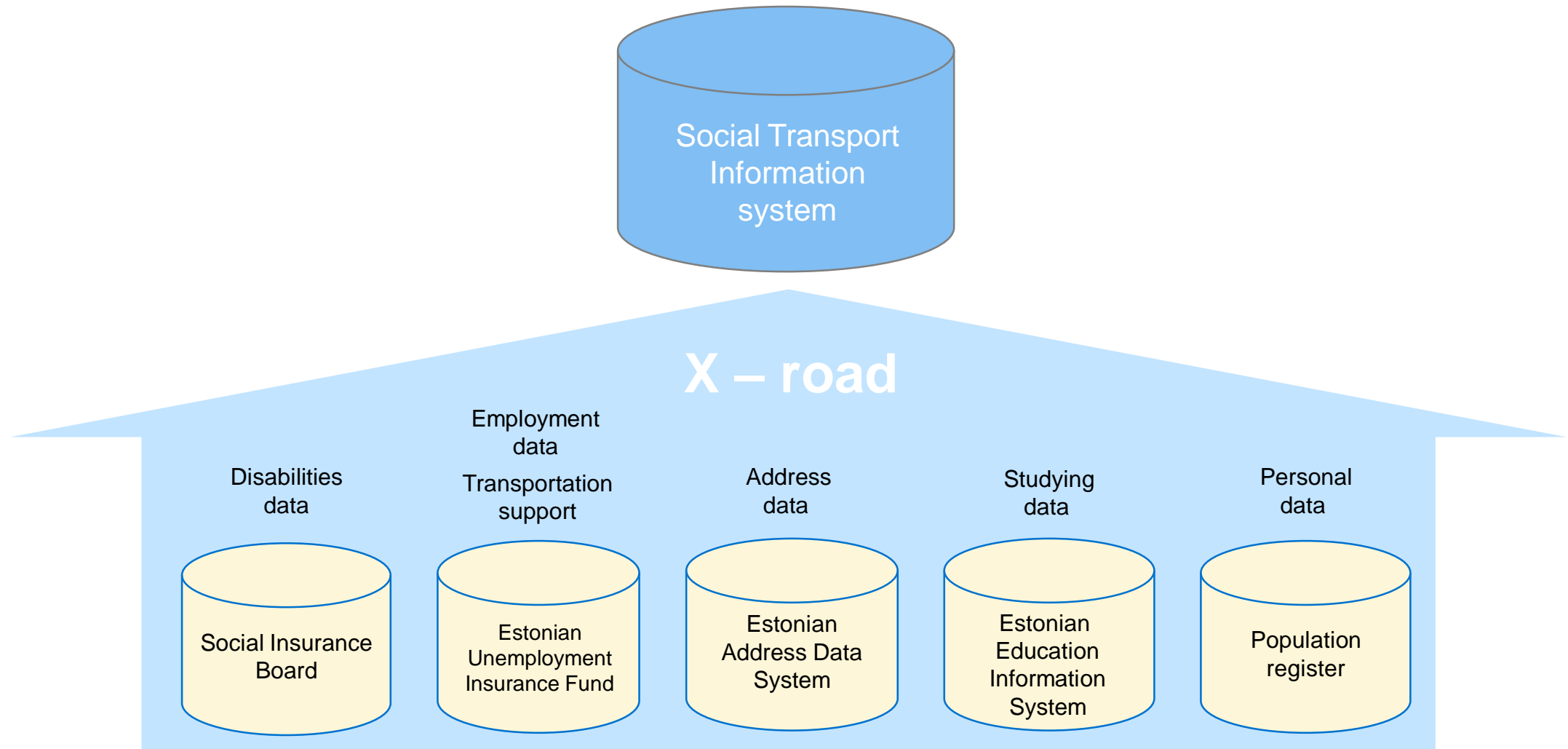
Interoperability

- Most of the e-services are provided by using some data from the state systems: e.g *Population Register, E-Business Register, Land Register* etc
- Local information systems make necessary real-time queries to state systems through X-road
- The city information systems only collect and store a minimum amount of data from the state systems

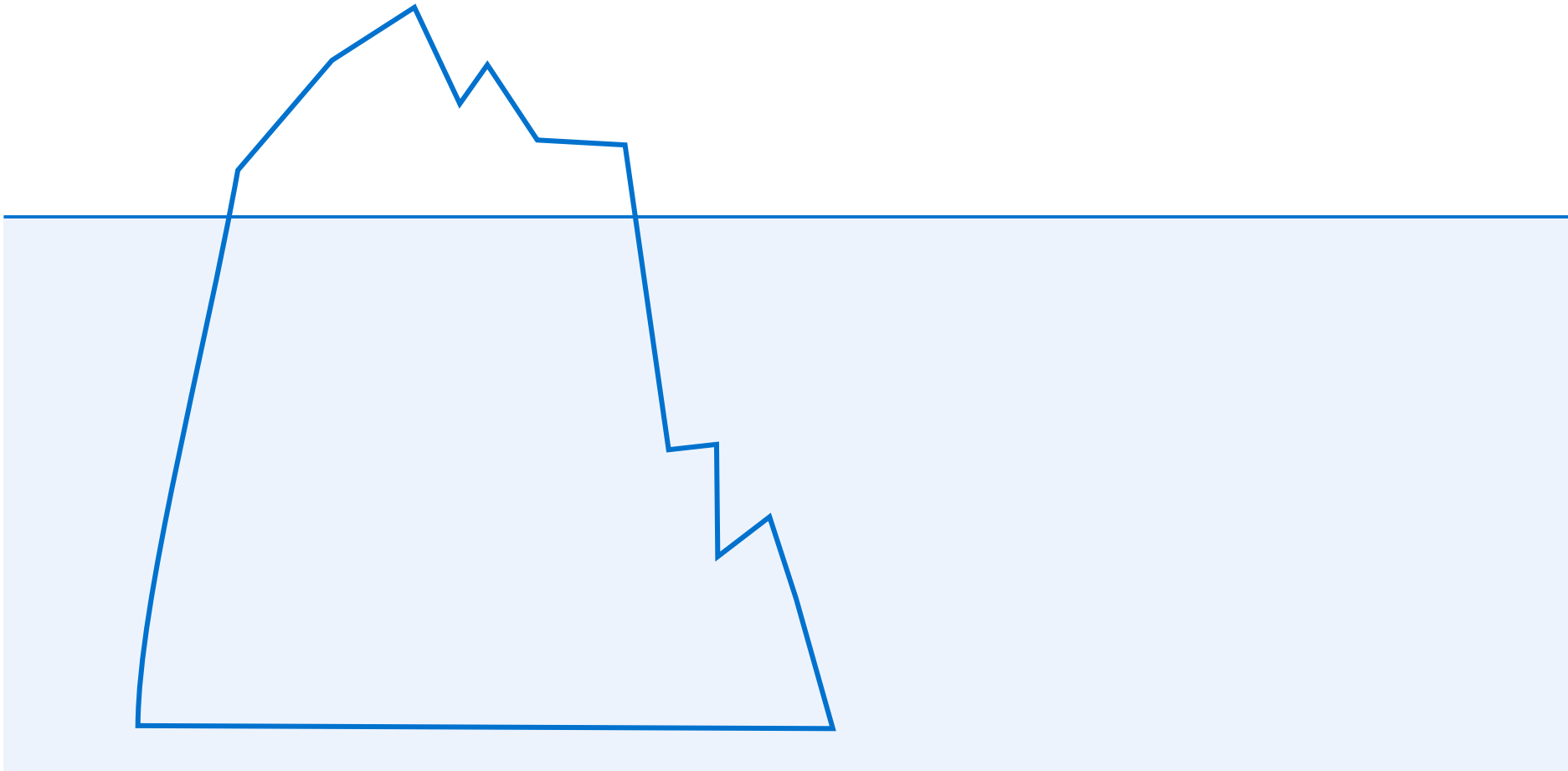
X-road

- Technological and organizational environment enabling a secure Internet-based data exchange between information systems
 - authentication,
 - high-level system for processing logs,
 - data traffic that is encrypted and signed
- Over 1000 organizations and enterprises in Estonia use X-road daily

Data Exchange partners



What e-service really means



Minimum data from the end-users

Tallinn linna sotsiaaltransporditeenuse infosüsteem

Vaegrijgijale LIINA KURVITS

Tallinn Sotsiaalkaitse ja Tervishoiuamet

PÕHIANDMED TEENUSTE ANDMED BÕTUDI ÕLEVAADK LIMIIDID

Põhiandmed LIINA KURVITS

Estia ettepanekkaebus

Põhiandmed
Kontaktandmed ja tegelik elukoht.

Isikuandmed
Eesnimi: LIINA
Perekonnanimi: KURVITS
Sünnikood: [redacted]
Registreeritud elukoht: [redacted]

Sidevahendid
E-post: [redacted]
Tallinnnumber: [redacted]
Tegelik elukoht: [redacted]

Muuda andmeid

Kontaktisikute andmed
Saab sisestada kuni kahe kontaktisiku andmed. Kontaktisikul on võimalik sotsiaaltransporditeenuse kasutajat vajaduse korral esindada.

+ Lisa kontaktisik

Dokumendid
Teenuse vajaduse tšendamineks oled sisestanud alljärgnevad dokumendid.

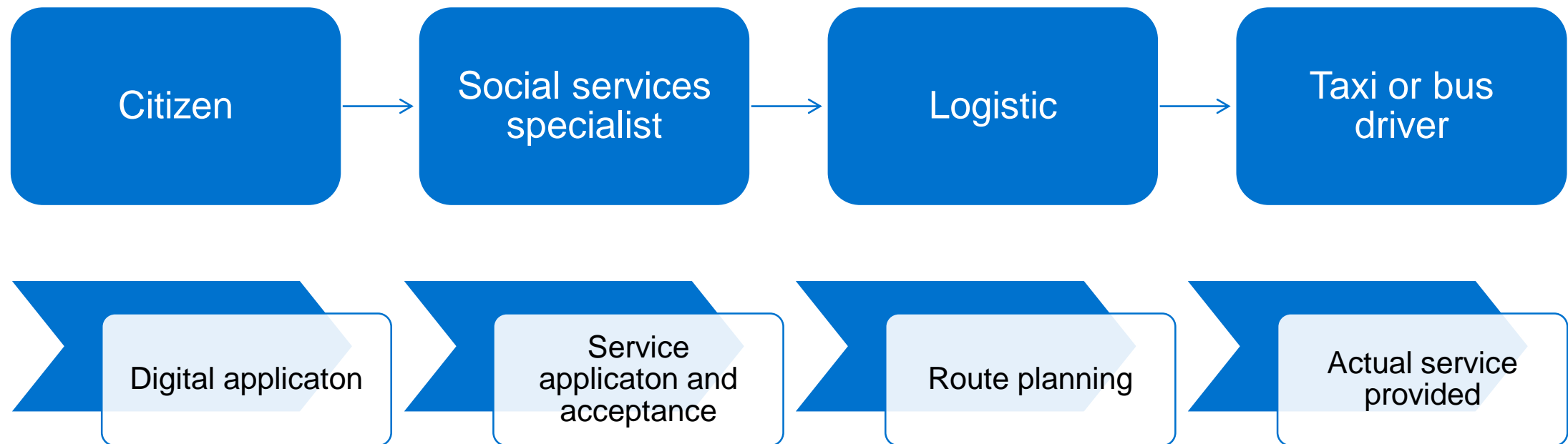
Dokumendi liik: [redacted] Faili nimi: [redacted] Teotluse number: [redacted] Leadihmise eeg: [redacted]

Seotud isikud
Loetelus on välja toodud kõik seotud isikud. Need on tuvastatud päringuteenusel ja süsteemi voilkaste alusel.

Nimi	Isikukood	Seos	Hoidluseõigus
ANETTE LOVIISA KURVITS	[redacted]	Laps	Täielik isikuhoidluseõigus

- Data from *Population Register, Education Register, Address Register ect.*
- Prefilled application
- The city information systems only collect and store minimum data from the state systems

Process is 100% digital, whole process and documentation within the same system



GIS component

Tallinna linna sotsiaaltransporditeenuse infosüsteem

Vaagnägiotole PRL Teenuseosutaja logistik

Tallinna Sotsiaal- ja Tervishoiuamet

Töölaud Planeerimine Tellimused Liinid Suhtlus Aruandlus Haldamine

Kolmapäev, 12 detsember 2018 Reede, 15 veebruar 2019 Kehtesta

Päev	Liine	Sõidusoove	Planeerimata	Kogupikkus	Koguaeg	Staatuse
12.12.2018						
01.02.2019	1	27	26	39.3	0:50	Kinnitatud
06.02.2019	1	27	25	23.0	0:33	Kinnitatud
11.02.2019	1	25	23	6.4	0:40	Kinnitatud
12.02.2019	2 (1)	23	20	479	1:05	Polell
13.02.2019	3 (2)	24	19	41.7	1:07	Polell
14.02.2019	2 (1)	23	19	6.4	0:17	Polell
15.02.2019	2 (1)	25	21	6.4	0:17	Polell

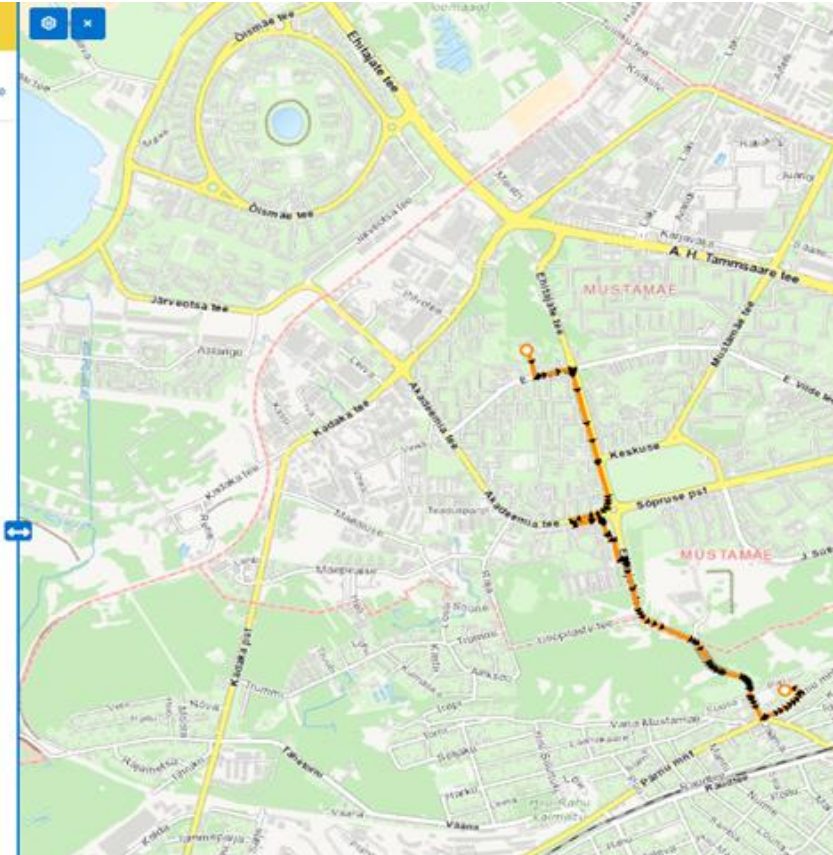
12.02.2019 liinid

OTSING

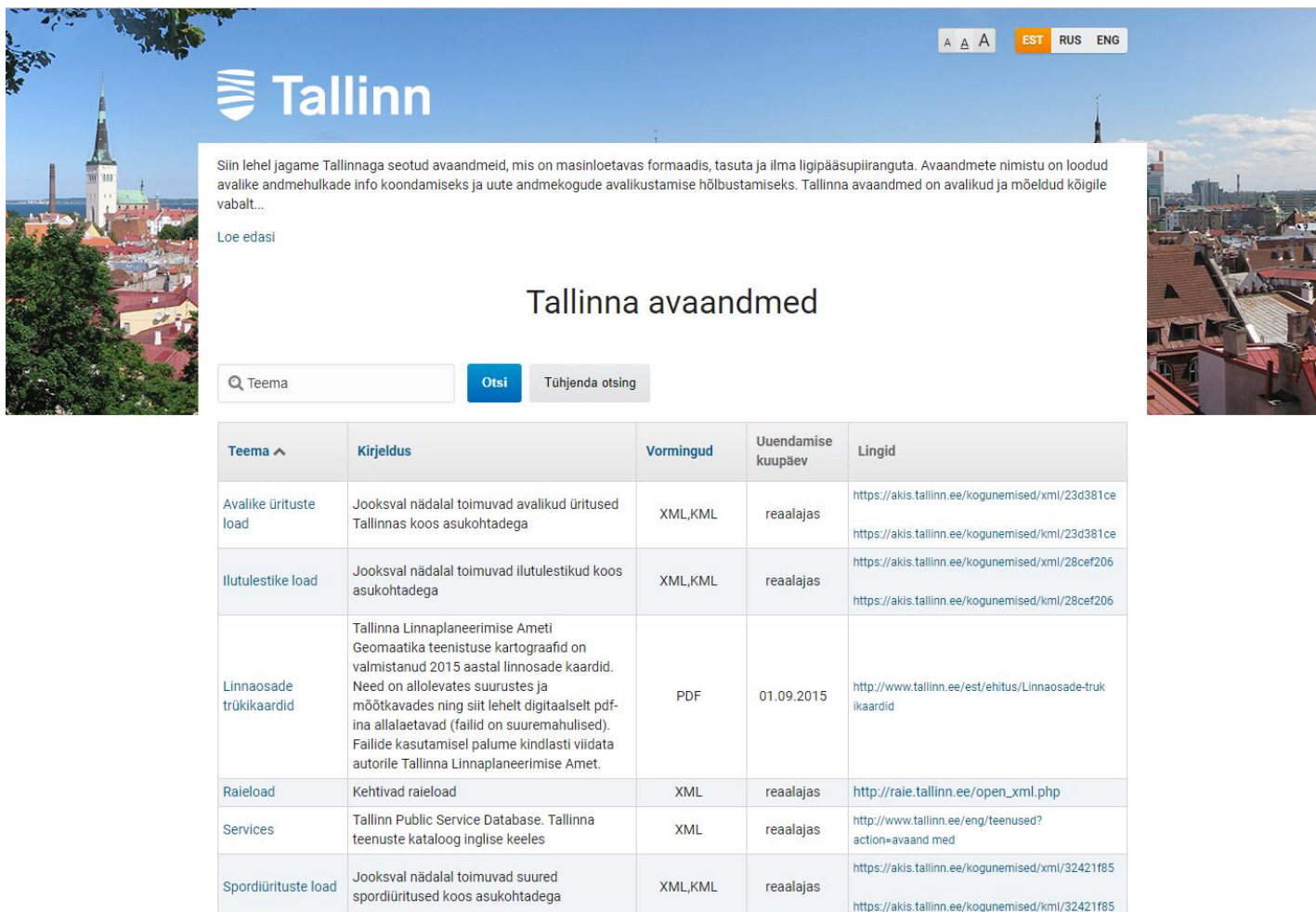
Buss Vali buss Juhit Vali juht Tulesta filtrid FILTREERI

Nr	Liini nimi	Algpeatuse	Algaeg	Lõpp-peatuse	Lõppaeg	Reisijaid	Buss	Bussijuht
H001	Mustamäe-Võidajooksu	E. Viide tee 120	15:18	Vana-Pärnu mnt 9a	15:25	1 & 1	567SKL - Fc	Vali juht
L003	Kesk-Nõmme	Ümera tn 32	6:40	Kadaka tee 153	7:38	2 & 2	062BBG - F	Vali juht

Ekspordi .csv



Open data



Siin lehel jagame Tallinnaga seotud avaandmeid, mis on masinloetavas formaadis, tasuta ja ilma ligipääsupiiranguta. Avaandmete nimistu on loodud avalike andmehulkade info koondamiseks ja uute andmekogude avalikustamise hõlbustamiseks. Tallinna avaandmed on avalikud ja mõeldud kõigile vabalt...


Loe edasi

Tallinna avaandmed

Teema

Teema ^	Kirjeldus	Vormingud	Uuendamise kuupäev	Lingid
Avalike ürituste load	Jooksva nädalal toimuvad avalikud üritused Tallinnas koos asukohtadega	XML,KML	reaalajas	https://akis.tallinn.ee/kogunemised/xml/23d381ce https://akis.tallinn.ee/kogunemised/kml/23d381ce
Ilutulestike load	Jooksva nädalal toimuvad ilutulestikud koos asukohtadega	XML,KML	reaalajas	https://akis.tallinn.ee/kogunemised/xml/28cef206 https://akis.tallinn.ee/kogunemised/kml/28cef206
Linnaosade trükikaardid	Tallinna Linnaplaneerimise Ameti Geomaatika teenistuse kartograafid on valmistanud 2015 aastal linnosade kaardid. Need on allolevates suurustes ja mõõtkavades ning siit lehelt digitaalselt pdf-ina allalaetavad (failid on suuremahulised). Failide kasutamisel palume kindlasti viidata autorile Tallinna Linnaplaneerimise Amet.	PDF	01.09.2015	http://www.tallinn.ee/est/ehitus/Linnaosade-trukikaardid
Raie load	Kehtivad raie load	XML	reaalajas	http://raie.tallinn.ee/open_xml.php
Services	Tallinn Public Service Database. Tallinna teenuste kataloog inglise keeles	XML	reaalajas	http://www.tallinn.ee/eng/teenused?action=avaandmed
Sportiürituste load	Jooksva nädalal toimuvad suured spordiüritused koos asukohtadega	XML,KML	reaalajas	https://akis.tallinn.ee/kogunemised/xml/32421f85 https://akis.tallinn.ee/kogunemised/kml/32421f85

User interface guidelines (1)

 Tallinn
Infosüsteemide UIG

Otsing

KOMPONENDID

- Raamistik
- Tüpoograafia
- Värvid
- Ikoonid
- Nupud**
 - Tüüp
 - Suurus
 - Nuppude efektid
- Vormid
 - Autocomplete
 - Check
 - Radio
 - Select
 - Text area
 - Text field
- Navigatsioon
 - Leivapuru
 - Rippmenüü
 - Päise menüü

Nuppude efektid

PREVIEW HTML CONTEXT INFO

COPY PREVIEW

Primaarne Sekundaarne Kontrastne Tertsiaarne

Hover

PREVIEW HTML CONTEXT INFO

COPY PREVIEW

Primaarne Sekundaarne Kontrastne Tertsiaarne

Active

PREVIEW HTML CONTEXT INFO

COPY PREVIEW

Primaarne Sekundaarne Kontrastne Tertsiaarne

Disabled

PREVIEW HTML CONTEXT INFO

COPY PREVIEW

Primaarne Sekundaarne Kontrastne Tertsiaarne

User interface guidelines (2)

Tallinna linna sotsiaaltransporditeenuse infosüsteem Vaegnägijatele LIINA KURVITS

Tallinna Sotsiaal- ja Tervishoiuamet Esitamata taotlused **Minu andmed** Tagasiside andmine

PÕHIANDMED TEENUSTE ANDMED SÕITUDE ÜLEVAADE LIMIIDID

Põhiandmed LIINA KURVITS
47702040236

[Esita ettepanek/kaebus](#)

Põhiandmed
Kontaktandmed ja tegelik elukoht.

Isikuandmed **Sidevahendid**

Eesnimi E-post

Perekonnanimi Telefoninumber

Isikukood Tegelik elukoht

Tallinnovations for future

- zero-bureaucracy - invisible services
- cross-border digital governance
- focus on cyber security for cities
- real-time economy and predictive analytics
- AI Strategy and 5G action plan

Thank you!



Martin Männil

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MOSCOW: SMART CITY

Shutenko Oleg
Deputy Minister, Department for external Economic and International
Relations of Moscow

MOSCOW DIGITAL CITY

2 500 km²

area



2 000

public institutions



80%

use smartphones



73%

use online services



61%

making online payments
everyday

12,5 mln

citizens

99% of territory

covered by
4G at 7+ mbs

23 Mbit/s

Average speed of mobile internet

330 km

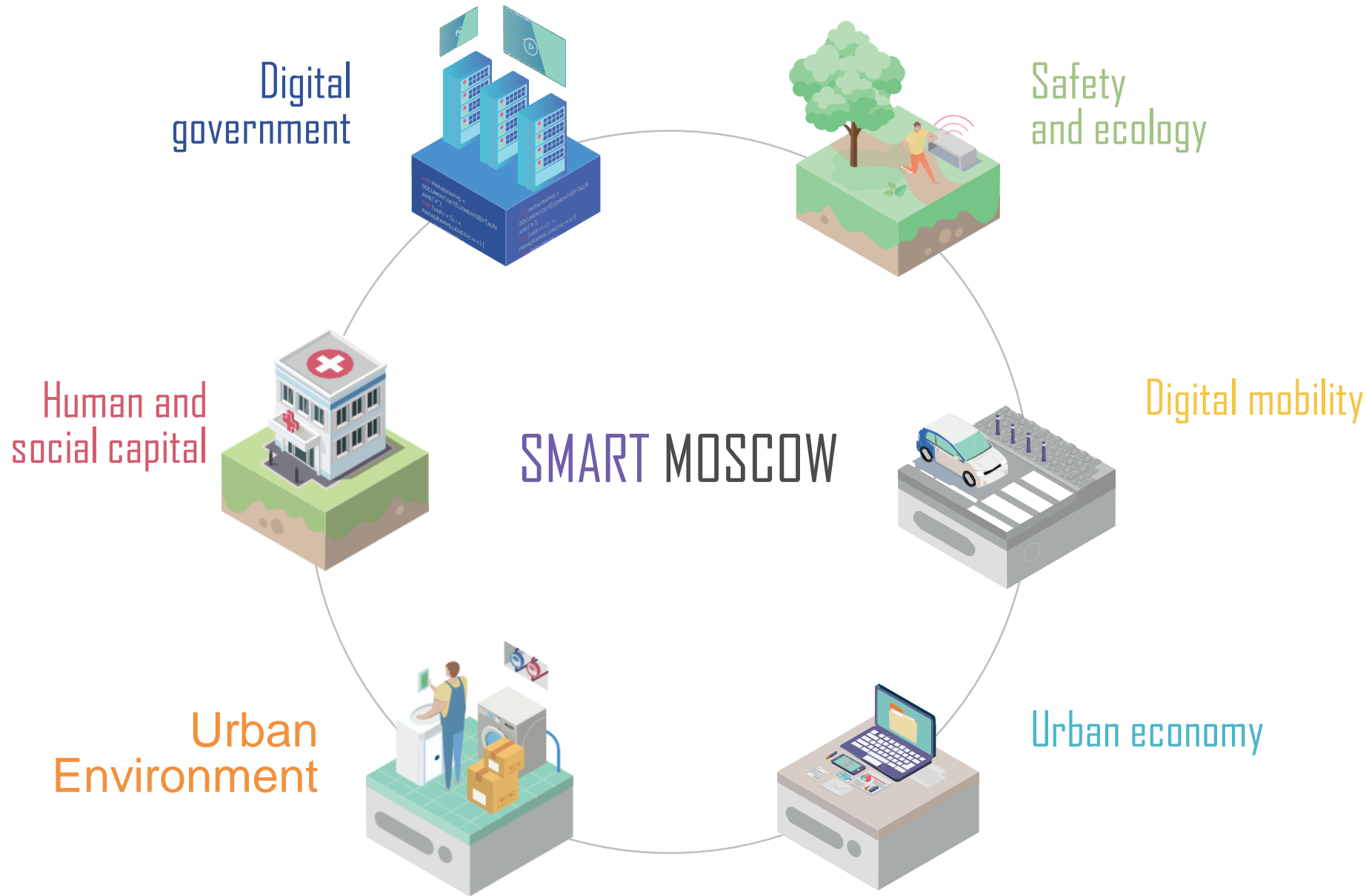
Free Wi-Fi in metro

15.5 km²

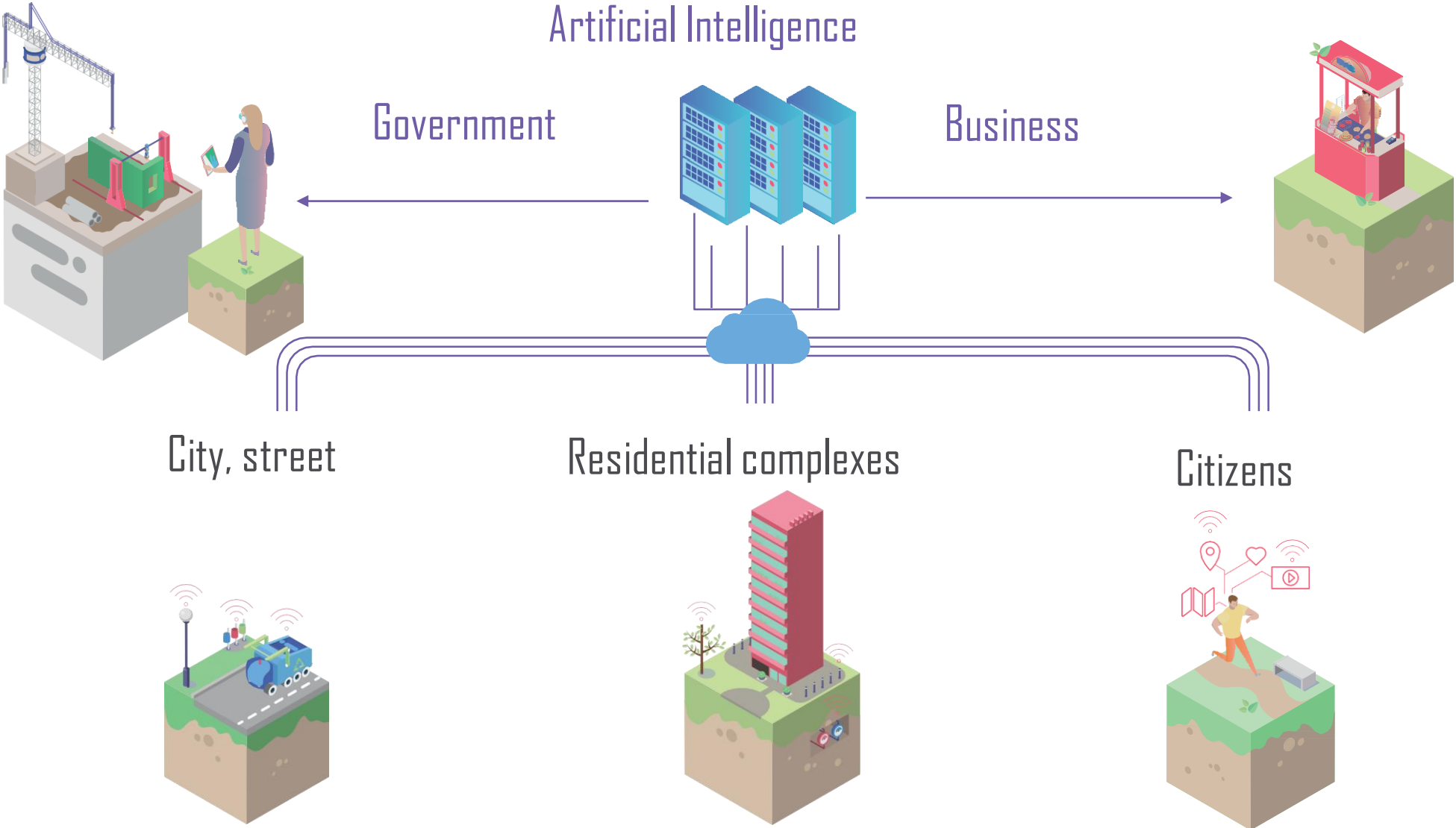
Free Wi-Fi in city center

1 100

Free public hotspots

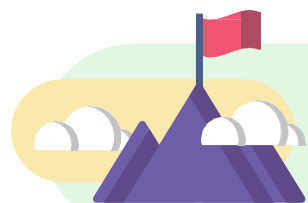


DIGITAL GOVERNMENT



HUMAN AND SOCIAL CAPITAL

Moscow electronic school and Uniform medical information and analytical system (EMIAS)



RESULTS

15%

increase of schools performance

\$ 38 mln

UMIAS saves annually

35 000

lessons scenarios
online

100%

of schools equipped by gadgets

500 mln

appointments to the
doctor

9 mln

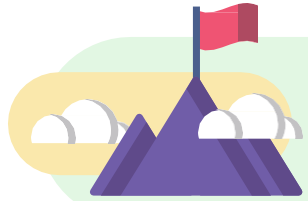
online medical
records



FACTS

URBAN ENVIRONMENT

E-services for online interaction between citizens and city government authorities – Active Citizen, E-government, portal “My city”



RESULTS

100 mln

hours of citizens personal time saved

95%

of online services users are satisfied by service quality

260

online services

10

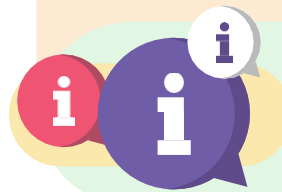
mobile apps

8,5 mln

users

30 000

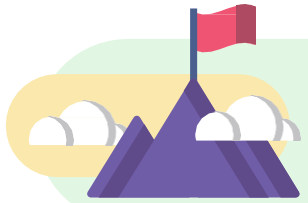
services every hour



FACTS

SAFETY

Intelligent video surveillance systems



RESULTS

3 000

crimes were detected by camera footage

by 25%

time of response to incidents
reduces

160 000

cameras

3 500

police officers

24/7

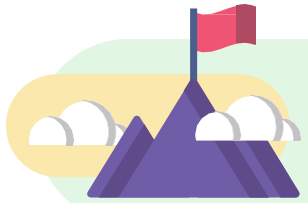
control over city



FACTS

DIGITAL MOBILITY

Intelligent transport system (ITS) – system of fixed and telescopic traffic cameras, mobile surveillance stations and road network sensors



RESULTS

16%

increase in the average traffic speed

59%

reduction in traffic accidents

34%

reduction in road fatalities

40 000

traffic lights

2 060

CCTV cameras

3 700

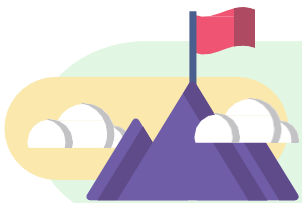
detectors

1 950

photo &
video recorders



FACTS



ACHIEVEMENTS

1st place

eastern European cities of the future

1st place

UN E-government survey

1st place

integrated development
of transport system (UITP)

**special
award**

provision of state services in electronic
form (WeGo)

1st place

organization of paid parking space
(TOMTOM)

TOP-5

attractive European cities for the investors
(Financial Times)

1st place

organization of urban transport system
(Sus-tainable transport Award)

TOP-5

city ready for future
technologies (PwC)

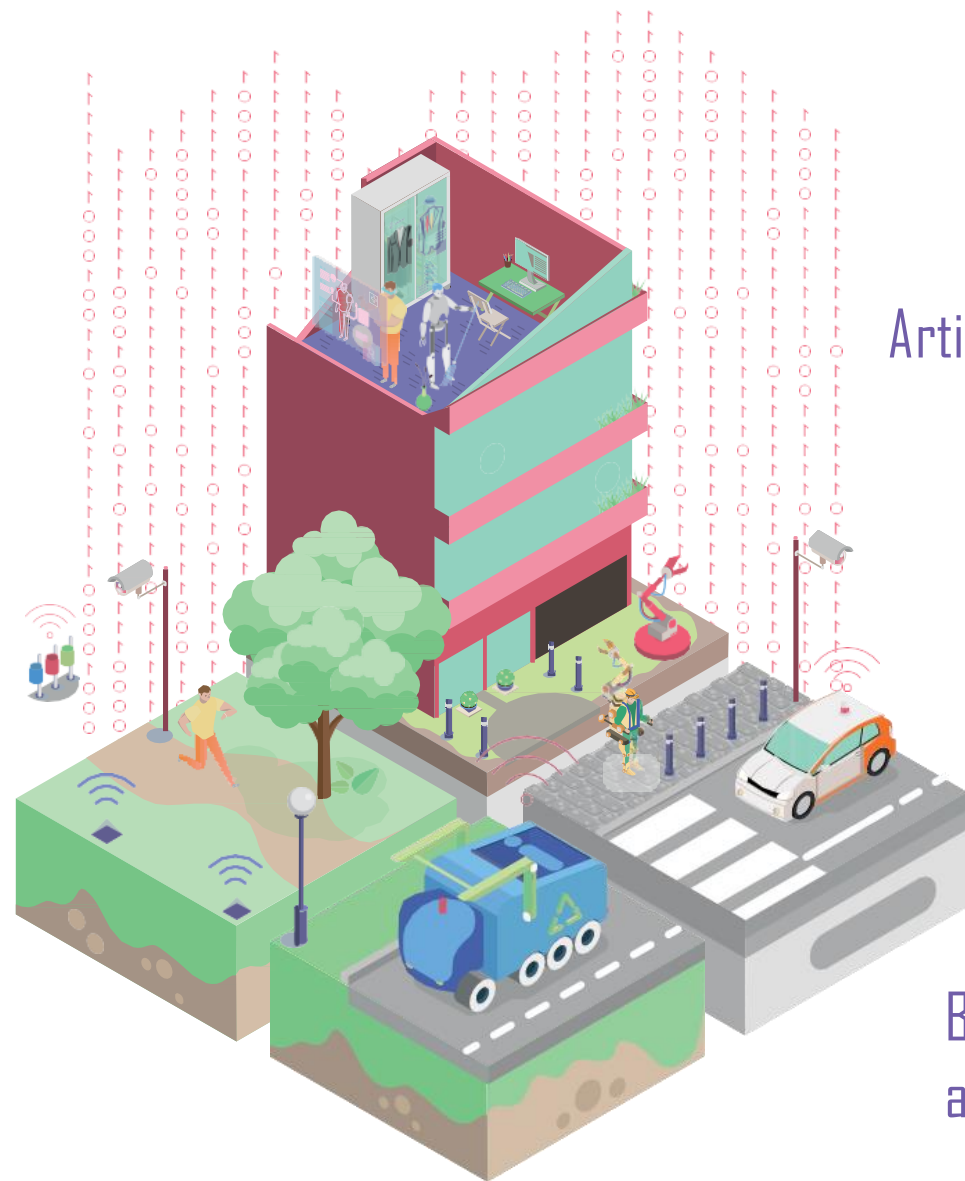
FUTURE OF SMART MOSCOW

5G technologies

Internet of things

Neural interface

VR, mixed and augmented reality



Artificial Intelligence

3D printing

Blockchain

Big Data and predictive
analytics

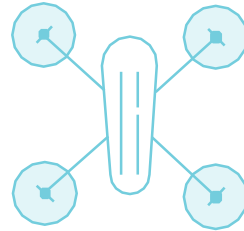
5G TECHNOLOGIES IN MOSCOW



Internet of things



Telemedicine



Transport



VR/AR



Safety

Smart city digital architecture

Customers and interfaces

Services

Data

Infrastructure



High data rate
10-20 Gbit / s

Minimum signal delay
1-5 Milliseconds

High network capacity
Up to 1 mln devices per km²

5G TECHNOLOGIES IN MOSCOW



High data rate

10-20 Gbit / s

Minimum signal delay

1-5 Milliseconds

High network capacity

Up to 1 mln devices per km²



Russia's first pilot 5G zone

Live broadcast of the FIFA 2018 Football World Cup in VR format



Telemedicine

Technologies of remote ultrasound and genetic analysis in 5G network
