The European Commission's
INTELLIGENT CITIES
CHALLENGE

SiMOS: Intelligent City Transformation Overview

ICC Final Deliverable

European Commission | The Intelligent Cities Challenge is funded by COSME, the EU programme for Competitiveness of Enterprises and SMEs

Executive summary

- All 11 urban municipalities, united in the ICC EoI SiMOS, are **diverse representatives of Slovenian urban cities**, including smaller ones. Cities are of coastal, alpine, pre-alpine, Pannonian character, of different sizes, economic orientation and development. These municipalities are home to more than a third of Slovenia's population.

- The most important challenges common to all municipalities are: the **set of active projects, initiatives and examples of solutions is fragmented and non-structured**, thus hindering the potential of advanced digital transition and achieving a sustainable breakthrough at a larger scale. It is therefore crucial to create an environment that allows for more collaboration and integration, both among staff and in terms of technical (IT) infrastructure and solutions.

- All 11 partner cities of SiMOS are planning **digital platforms** and **digitalization of public administration and public service**, especially in the field of sustainable mobility

- During the ICC we have successfully implemented: critical and comparative analysis of the cities' needs, solutions and plans, knowledge exchange, joint activities like workshops, site visits, lessons, and new knowledge acquisition, implemented new, but still separated solutions(city card, e-services solutions for sustainable mobility implemented, urban digital platform established, e-administration solutions tested).

- We have held a number of interviews and participated in the activities of the national authorities, thus improving our ability to integrate solutions developed by the state for citizens as well as solutions of a technical nature (IT infrastructure) with which we will be able to connect to or work on (platforms, archives, etc.)

Smart solutions for high quality of life

In Ljubljana, we are aware of the importance of integrated digital development and the development of digital solutions that include all groups of citizens with an emphasis on caring for vulnerable groups to whom the digital world is still foreign; some do not even have access to the Internet. When introducing new digital solutions, we must always raise the question of how we can use them to further increase the quality of services for our citizens and visitors to the city.

Today, when we are actively dealing with climate change, new technologies also help us monitor the state of the environment, energy and raw material challenges. Based on the data collected in this way, we can take measures for a better tomorrow and preserve the planet for generations yet to come even more effectively.

I am proud of great achievements of Ljubljana as part of the 100 Intelligent cities project, because quality life for everyone in a green, orderly, clean and safe city comes first. I am happy that our achievements are also recognized in the wider international space. We are particularly proud of the fact that Ljubljana is at the very top of the ranking of the green capitals of Europe so far and this year we also hold the title of the best destination in Europe, awarded to us by travelers from all over the world. Maximilien Lejeune, director of European Best Destinations, pointed out that "world travelers love Ljubljana. It boasts an exceptional quality of life, green areas, accessibility, is a safe, tolerant, multicultural, optimistic, sporty, family-friendly destination. It is a model for all European destinations."

Ljubljana, the green jewel in the middle of Europe, is a city where different people live together in mutual respect and thus build a solidary, tolerant city of comradery, the most beautiful city in the world!

Zoran Janković
Mayor of the City of Ljubljana

The consortium SiMOS, consisting of all 11 Slovenian Urban Municipalities and led by the City of Ljubljana, pursued an EU-supported transformation over four main stages, and this document details that journey by these sections

Overview to the city's journey and structure of this document

	1 Preparation & assessment	2 Ambition & roadmap	3 Implementation	4 Review & way forward
	5 months: September 2020 – January 2021	3 months: February 2021 – April 2021	15 months May 2021 – July 2022	2 months August 2022 – September 2022
Summary	Digital transition in municipalities is **sporadic**. For faster and more efficient success, coordinated action is needed in the development of **a)** **infrastructure,** (urban digital platforms, IoT, eID, etc.), **b)** **Employees and citizens competences** , and **c)** **new digital services**. ***Key driver***: Digitalization committee at AUMS. ***Ecosystem stakeholders***: SDP at national level (government), IKT SRiP, NGOs and external experts from academia (FRI. FE ...).	Goal 1: We will build a common or inter-connected citizen centered **URBAN DIGITAL PLATFORM**, allowing multiplication of solutions Goal 2: We will strive for a life-long **DIGITAL COMPETENCES LEARNINGS** of public administration and other stakeholders Goal 3: We will build a stable, resilient, sustainable **INNOVATIVE DIGITAL ECOSYSTEM** of cooperating cities, enabling the free flow of services, citizens and data.	Milestone to G1: **UDP public tender documentation** for : Kranj, Ljubljana, Celje; **eID and city cards**: Ljubljana, Koper, Nova Gorica, Novo mesto Milestone to G2: ICC workshops, **Strategy for digital development** - prep. (Ljubljana, Velenje) Milestone to G3: Digitalization committee at AUMS established; National Strategic planning on Digitalisation for public sector; regular collaboration with NGOs and external experts	Key success to G1: **UDP:** Kranj - Implementation start, Ljubljana – implementator selection in progress **eID and city cards**: implemented; plan to expand interconnections between city cards Key success to G2: education **financing** included in the financial framework 2021-2027 Key success to G3: a **cooperation** proposal **with national government** to connect and upgrade the UDP ecosystem presented to SDP

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Section

1

SiMOS : Preparation and assessment

ICC transformation

September 2020 to January 2021

European Commission | The Intelligent Cities Challenge is funded by COSME, the EU programme for Competitiveness of Enterprises and SMEs

Introduction

This deliverable is focused on communicating what the **Consortium SiMOS** (consisting of all 11 Slovenian Urban Municipalities and led by the City of Ljubljana) will try to achieve on the ICC and why. The main focus of this deliverable is on:

1) analysis and assessment of the consortium cities maturity, performance, strength and weaknesses,

2) setting an ambitious vision along with a framework of a roadmap with concrete priority solutions.

The main driving force for the coordinated effort of all urban municipalities is the **medium level and low growth of digital interaction between citizens, companies and public administration** in Slovenia in comparison to EU. This calls for a push towards and **advanced digital transition** of the city administration.

The driving force behind forming a consortium was the **already established cooperation** between cities and due to the fact that cities are geographically close-by compared to EU standards. The efforts of the Consortium SiMOS are supported by numerous national and regional entities from all sectors (PPPP, academia, research and private sector).

STATE OF THE CITIES

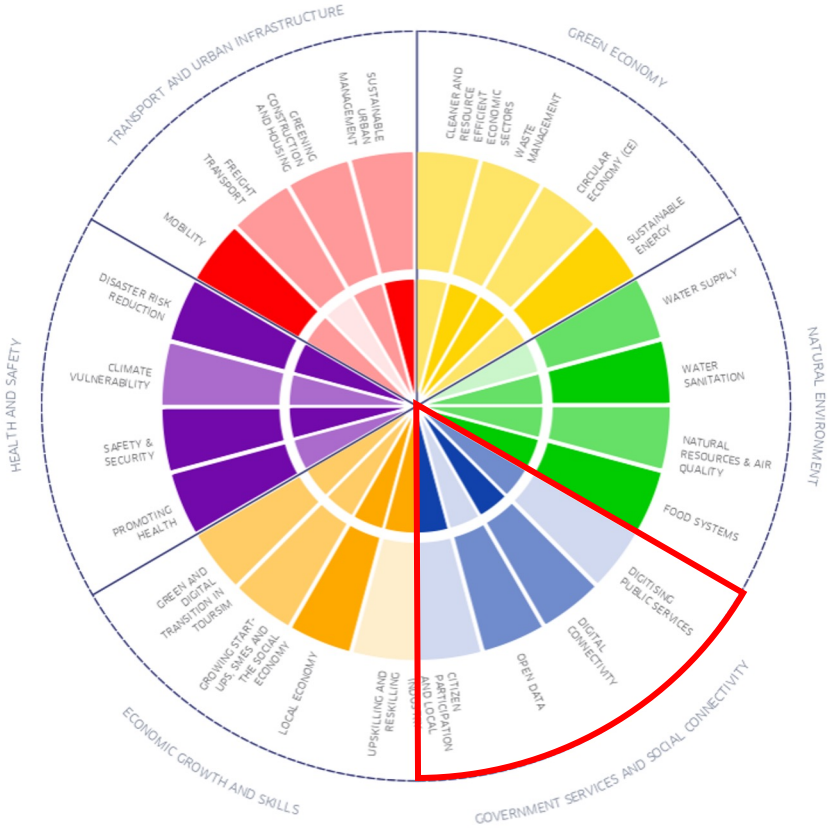
Key insights from city performance analysis (TOP-DOWN)

Of critical importance - and we should be working to change

Of some importance - we should act if there's an opportunity

Contextually relevant, but not major point

The focus of the ICC for SiMOS is in the Government services and social connectivity area, so this analysis focuses solely on that area. Regarding the other areas, we can conclude that we are very well situated, with Health&Safety being our strongest area, followed closely by Natural Environment and Green economy (which is logical if taking into account that the City of Ljubljana was the Green Capitol 2016). The analysis shows that the chosen priority was the correct one as it is in dire need of catching up to the other areas.



Analysis of Government services and Social connectivity

Higher performance observed

1 Citizens participation

Citizens are actively involved in launching new initiatives, mostly through the 17 districts of Ljubljana and through the portal Citizens Initiatives (more than 39.000 active initiatives at the present moment) and projects of the citizens choosing (participative democracy). The biggest challenge in this area lies in utilising the Public Procurement of Innovative solutions, where only first steps are being made.

2 Digital connectivity

The cities are quite well connected, mostly by 4G networks (with some pilots for 5G) and through numerous free Wi-Fi networks, not only in libraries and shopping malls, but also on broader public spaces (especially in the city centre). The expectations of the citizens for digital information, services and interaction with the city administration have been steadily rising in the past year, with a big jump in the present COVID-19 pandemic. The biggest challenges we face is upgrading the infrastructure to the digital era, where there are a lot of seeds, pilot projects, but large scale project are yet to be implemented.

Lower performance observed

1 Digitising public services

Although we have seen a big rise in introducing digitalized services in the past years and the cities support the universal access to e-services(e.g. urban planning platform, e-tenders, platform for citizens initiatives etc.), the city administration still provides most of the services in the old-fashioned way with only information available online. Although the cities are planning to expand the possible e-services, the push towards them has to be balanced with digital competency of the citizens (most of the training initiatives are led through the 17 district authorities)

2 Open Data

There is quite some open data available, but not yet in real-time with API's (these are available only for public transport and partly for public parking), The challenges lie in using the open data for policy making and setting the norm of sharing data between different city stakeholders (there are only some cases of single and direct accesses). The positive aspect is that citizens generally trust when it comes to data privacy, security, which is a valuable foundation to build upon.

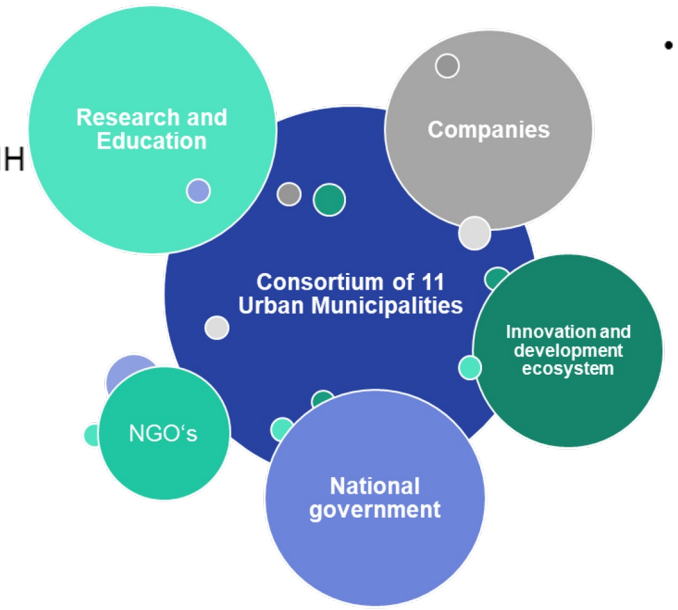
City Ecosystem

The ICC SiMOS consortium forms a complex ecosystem of **11 urban municipalities** with the backbone of city administrations and their connected public companies, public services providers and public institutions. Supporting national associations and institutions stem from all sectors (PPPP, academia, research and economics). Each city within consortium is locally connected to its specific ecosystem of stakeholders (e.g. Regional Development Agencies, Technology parks or incubators, Universities etc.), who provide additional support to the cities at the local level.

- **GIS System:** ZRC SAZU Anton Melik Geographical Institute (GIAM)
- **Innovative learning:** The JSI Centre for Knowledge Transfer in Information Technologies
- Public Private People Digital Innovation Hub - 4PDIH

Universties and Faculties

- University of Ljubljana (especially Multimedia Laboratory of the Faculty of Electrical Engineering, Laboratory for Telecommunications, Faculty of Electrical Engineering
- University of Maribor (especially Faculty of Organizational Sciences
- University of Nova Gorica



- **Network of SME's:** The ICT Innovation Network of The Chamber of Commerce and Industry of Slovenia
- **SME's:** 3Port d.o.o., Marjetica Koper d.o.o., Emigma d.o.o., Actual I.T. d.o.o. etc.

Development agencies:

- Regional Development Agency of the Ljubljana Urban Region (RRA LUR)
- Development Agency of the Savinjska Region
- Development center Murska Sobota
- BSC - Business Support Centre Kranj d.o.o.
- Regional Development Agency of Northern Primorska
- Regional Development Agency for Carinthia

Technology parks/incubators

- Technology Park Ljubljana d.o.o.
- Styrian Technology Park
- Pomurje Technology Park
- SAŠA incubator
- Primorska Technology Park
- Goriška Local Energy Agency

- **Networking and support:** The Slovenian Business and Research Association (SBRA)

ICC strategy: Vision and ambition statements

DIGITALLY CONNECTED IN THE HEART OF EUROPE

1. We will build a common or inter-connected citizen centered URBAN DIGITAL PLATFORM, allowing multiplication of solutions.
   e-connected

2. We will strive for a life-long LEARNING OF DIGITAL COMPETENCES of public administration employees and all the other stakeholders.
   e-competent

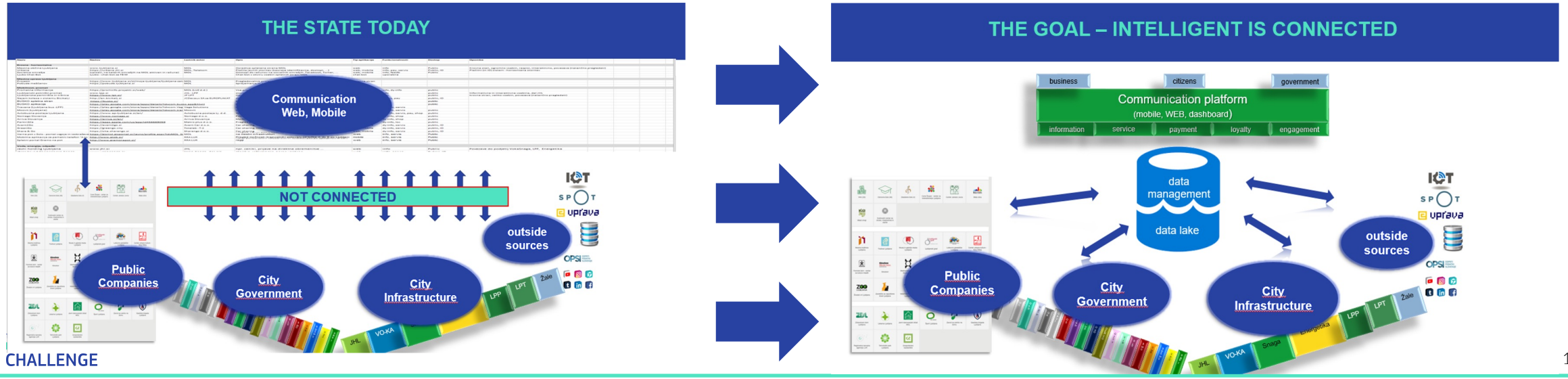
3. We will build a stable, resilient, sustainable INNOVATIVE DIGITAL ECOSYSTEM of cooperating cities, enabling the free flow of services, citizens and data.
   e-administration & e-participation as e-governance

STRATEGICAL PROJECTS IN THE PIPELINE 1/3

1) e-connected: We are building a **common Urban Digital Platform for the exchange of knowledge, solutions and opportunities.** It will be based on an inter-connected and/or centralized data lake with a once-only approach to data management that will allow a safe and transparent data collection and exchange on the foundation of open data principles.

The platform will be based upon **»life events«** and will provide information and services on tourist, culture, sports, care, transport and other areas, leading to a satisfying user experience of citizens and visitors. The platform will be a **single-entry communication platform** that will enable e-participation, allowing for a day-to-day active participation of citizens in the issues of the city. The platform will be designed to allow for a fast and easy development of new modules, corresponding to the needs of the public administration or citizens.

The platform will be a foundation, upon which **state-of-the-art technologies** can be applied (IoT, artificial intelligence, data based planning and decision-making, e-identity etc.) The first steps will be upon **test-before-invest principles**, using smaller innovative pilot vertical solutions. The platform will also provide the means of **knowledge transfer** by introducing innovative forms of learning, development of new skills that will enable the city administration employees, decision-makers and citizen to confidently use modern digital solutions.



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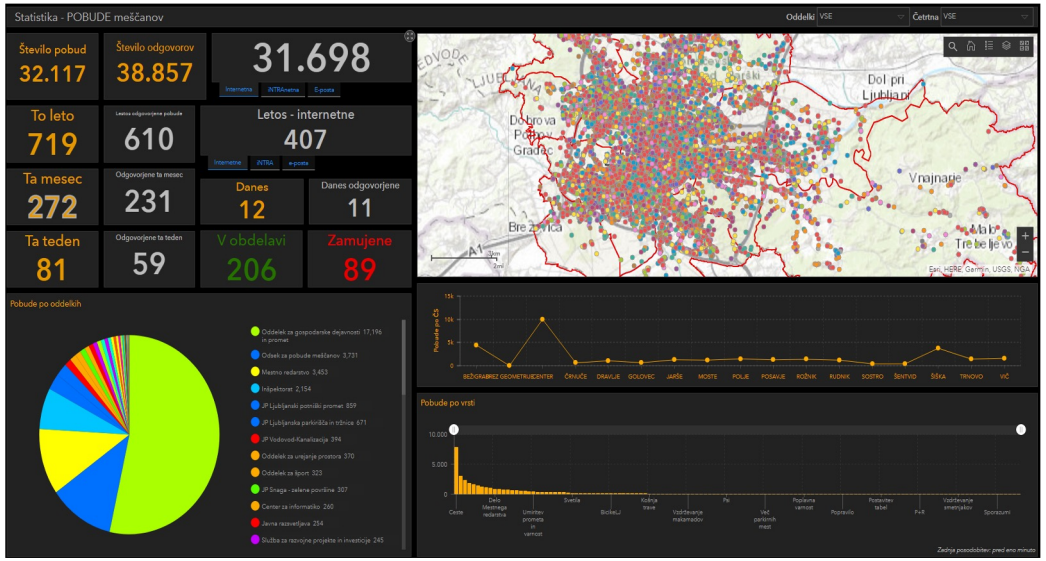
STRATEGIC PROJECTS IN THE PIPELINE 2/3

We also aim to improve, connect and extend **e-supported city services** delivery by implementing applications and solutions that would enable multi level communication among citizens, businesses and city administration. The solutions will harness the power of the Urbana digital platform and will be based on the **e-ID** and the upgraded **Urbana+ city card**, enabling: payment system for urban services, the integration of current silo systems of solutions and the establishment of a loyalty scheme by supporting and deploying digital solutions for on-site services to make this management optimal, cost-effective and environmentally sustainable (e.g. using digital twins to monitor management and model predictions, impacts with modern real-time visualizations), by developing digital systems that will work even in crisis situations such as floods, earthquakes, epidemics, industrial accidents or similar.

2) e-competent: Support cities strategies and vision in the field of sustainable, resilient, green and climate neutral efforts by activities such as training, public events, we also want to achieve two general digital cultures, **digital literacy** and a level of trust among all stakeholders (citizens, business partners and public administration employees).



STRATEGICAL PROJECTS IN THE PIPELINE 3/3

3) e-administration & e-participation as e-governance

We plan to improve **e-administration** systems by implementing new financial application, document management program, applications and other digital solutions (supported by new technologies like AI and block-chain based, BIM, xR), which would result in **optimisation and automatization of the processes**.

document system	office programs	City Card, ID and payment system	public lighting	culture	governmental services and information
financial system	access controls	data lake	traffic signalization	tourism	local communities' associations
HRM	web, mobile presentations	communication platform (web, mobile)	water supply and sewerage	health and social care	economic associations
fixed assets	legal affairs	reservation system, access controls	gas	education	intervention and security services
real-estate management	project and investment management	on-line shop	waste management	environment and animals	public services and regulators
spatial management	support for the work of the authorities	alarming and notifying	roads, parking	sports and recreation	open data
administrative procedures	municipal policing and inspections	loyalty system	city public transportation	inter-city public transportation	
budget planning and monitoring	security	Call center	housing and business premises	mobility of goods and people	R&D
public procurement	PR	BI, AI	care of the dead	energy supply	(electro) mobility and multimodality

Our continuous development also includes a constant striving to upgrade and update the **Citizens' Initiative system** as **e-participation** tool. We aim to link it to the system for supporting public consultations in the preparation of sectoral strategies (e-consultations, e-surveys, e-citizens engagement and e-co creation processes) by developing new communication tools, by simplifying access to city documents and financial matters and by establishing a clear and comprehensible system for monitoring the effects of all urban measures in the field of sustainable development of the city.

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Section

2

SiMOS : Ambition and roadmap

ICC Transformation

February 2021 to May 2021

European Commission | The Intelligent Cities Challenge is funded by COSME, the EU programme for Competitiveness of Enterprises and SMEs

1 Roadmap summary

The key features of the roadmap are the operationalisation of the 3 strategic projects already in the pipeline of the City of Ljubljana with the other cities of the consortium having similar project in mind or in some degree of implementation.

The strategic projects of the SiMOS are:

1. e-connected: Urban data platform with Cities cards and e-services system (financial, document system etc.)
2. e-competent: digital literacy improvement
3. e-administration: improvement of e-administration; e-participation: Citizens initiatives system

* **High level implementation roadmap (“10000m plan”) is not available for the consortium as each solution has its own plan.**

Rationale to road map

The planning was based on several detailed analyses and surveys on the needs of municipalities (local communities) in the field of digital transition and smart city and community development. Part of the analysis was also carried out as part of the ICC methodology.

The key findings were that the digital transition is delayed due to the low digital maturity of local authorities as an organization (the internal workings of municipal administrations are largely paper-based) and siloed (pilot) solutions of individual services for citizens. These solutions are usually developed in co-funded projects, many of which have not been further developed during the lifetime of the project after implementation. A key reason for this situation is the unsystematic financing of the digital transition of local authorities and low cooperation between IT/digitization staff at municipalities. The most important action at the outset was therefore the creation of the Digital Development and Smart Cities Committee within the Union of Urban Municipalities of Slovenia, which brings together 11 (now 12) urban municipalities in Slovenia.

The Digitalization Committee is a platform for city administrations' IT staff to exchange ideas, share knowledge and information, find common solutions for the same services and act in a coordinated way in the planning of digitalization funding under the Financial Perspective 2021-2027.

1 Initiative charter e-connected LJUBLJANA

Strategy

Description

What: URBAN DIGITAL PLATFORM

Why: infrastructure for better connectivity, data sharing and communication

How: Establishment of Urban digital platform

Link to vision

To be digitally connected in the heart of europe, an urban digital platform is becoming a necessity towards becoming an intelligent city.

Link to ambition statement

One of the ambitious statement was: We will build a common or inter-connected citizen centered
Urban Digital Platform, allowing for a multiplication of solutions.

Expected impact and timing

Easier implementation of new services, connected system of data, communication module; 3 years to full implementation

Stakeholders involved

Solution lead: Department for digitalisation

Solution working team: Public Holding company, all municipal departments

Contributors: Academia, external experts, providers, developers

Risks and mitigation

Lack of internal resources, founding

Low motivation for vertical solutions at departments to be integrated, resistance to workflow changes, fear of new tasks

Education, cooperation in early phase with departments

Inputs, outputs, outcomes and impacts

Source of funding and estimated cost

1.000.000 EUR/y city and Holding budget

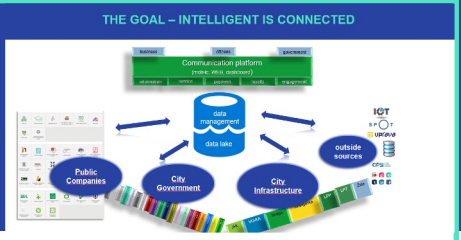
Solution maturity outputs

Public tender ongoing

City performance outcomes and impacts

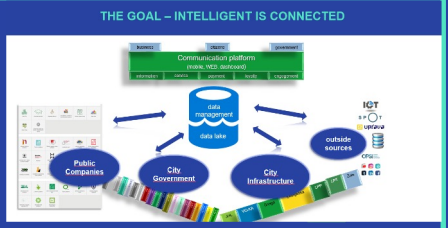
Will be measurable in 3 years

4 Key Performance indicators: e-connected Ljubljana



Solution	Activities – Inputs and actions	Solution Maturity - outputs	City performance – outcomes and impacts
Urban data Platform	Citiziens co-creation workshops	Improved user experience	New service developed
	% of key activities completed on time	for 2 level by Likert scale (Survey before and after)	Number of new users

KPI- Cross cutting indicators: e-connected Ljubljana



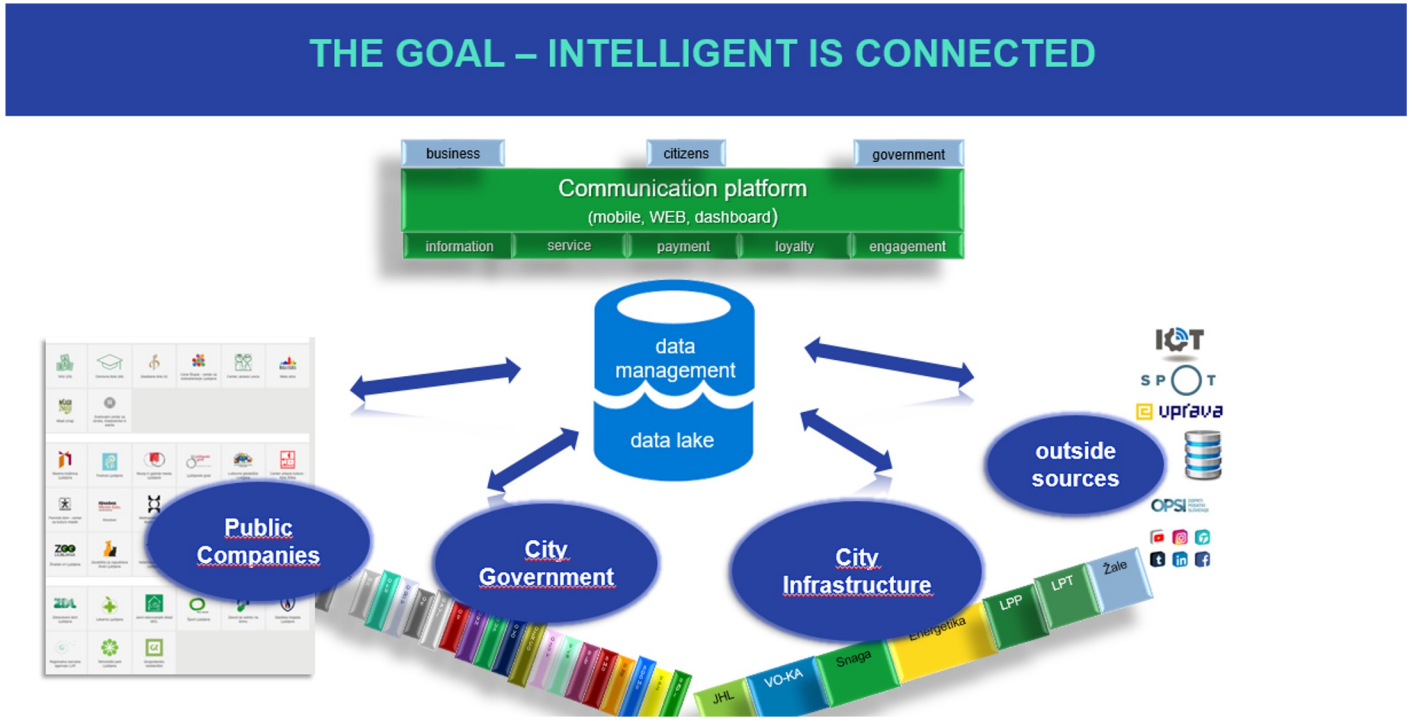
Cross cutting indicators
Integration with other platforms (Tango, ESRI, etc.)
Sharing the experience with other ICC participants

Rationale to KPI approach for e-connected Ljubljana

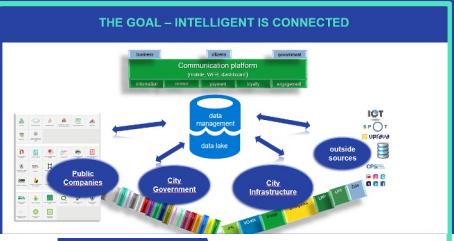
Availability:
July 2022 - start of the project Urban digital platform public tender, budget assured for 8 years

Actionability:
2019- 2021 researches existing solutions on the market and EU projects
2021 - preparation of documentation
2022 - public call (public tender)
2022 – competitive dialogue (four rounds with seven registered consortiums of IT companies)
End of 2022– after competitive dialogue – final public call
Jan - June 2023 - negotiations for best solution
June 2023 - contract signed

Validity:
September 2022 – demonstration period for providers



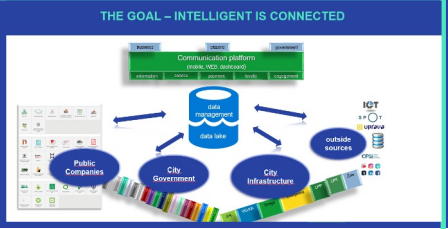
Roadmap for solution e-connected LJUBLJANA



Activity ★ Milestone

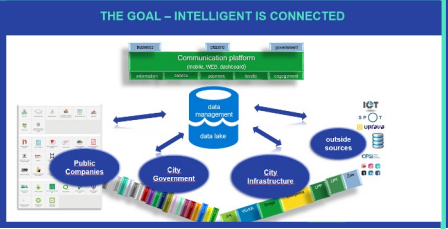
	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022	Q1 2023
1 Initiative 1	Project scope document					
		Public tender				
					Project kick-off	Implementation phase
Overarching Milestones		★ Public tender finished			★ Beta version of platform	★ Fully functional Urban data platform ★

Key Performance indicators – Activities for e-connected Ljubljana



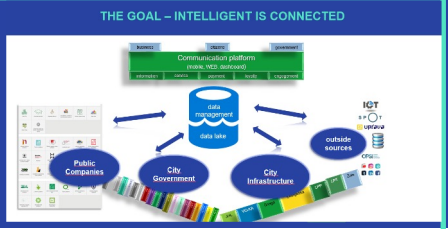
Solution	Initiative	Activities – Inputs and actions
Urban data Platform	New Department for digitalisation	Citiziens co-creation workshops
	New Department for digitalisation	% of key activities completed on time

KPI– solution maturity (outputs); e-connected LJUBLJANA



Solution	Initiative	Solution Maturity - outputs	Targets
Urban data Platform	New Department for digitalisation	Improved user experience	12.000 public employees 300.000 citizens

Key Performance indicators: e-connected LJUBLJANA



Solution	Initiative	City performance – outcomes and impacts	Targets
Urban data Platform	New Department for digitalisation	New service developed	1 new service with multiple modules
	New Department for digitalisation	Number of new users	12.000 public employees 300.000 citizens

Initiative charter e-connected KRANJ

Strategy

Description

What: The Smart City Kranj concept represents connected technological solutions, with the aim of providing digital services for citizens and business entities and for better management of the urban environment.

Why: Better management of the city, improve the quality of living, to facilitate business operations, due to the connection of city centers

How: solutions research, public tender, negotiations, solution selection, production, testing, implementation

Link to vision

In the starting points for the development of a smart city Kranj wants to take advantage of the technological orientation of the environment in which many high-tech companies operate and orientations with accelerated digitalization.

Link to ambition statement

The smart city of Kranj will operate on the principle of citizen involvement, in order to achieve the digital transformation of the city. Digital solutions will be closely linked to 'digital citizens'.

Expected impact and timing

The Municipality of Kranj wants to establish a comprehensive system for managing digital services and resources under the common name Digital Platform of Smart City and Community Kranj.
Implementation – december 2022, impact after two years

Stakeholders involved

Solution lead:

Department for smart city and development

Solution working team:

One representatives from all departments at municipality, project lead by Department for smart city, under supervision by deputy mayor

Contributors:

Department for public procurement, finance, IT, low department, local firms

Risks and mitigation

Selection of a qualified company for project implementation, misunderstanding of employees, difficulty in obtaining data from public institutions and companies, protection of personal data

Inputs, outputs, outcomes and impacts

Source of funding and estimated cost

Budget resources; aprox. 700.000€

Solution maturity outputs

Establishment of open data platform with first vertical households

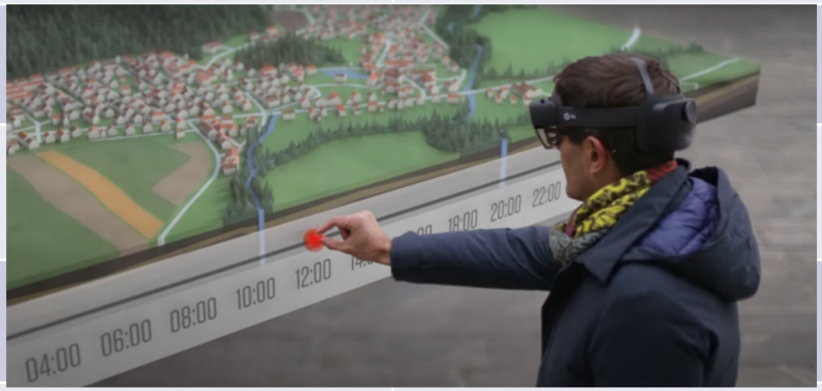
City performance outcomes and impacts

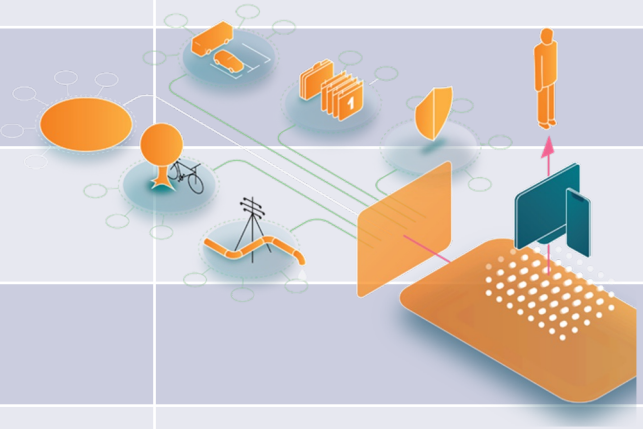
New city digital solution.

The first measurable effects will be visible half a year after implementation, and more visible two years after implementation

Key Performance indicators - overview for e-connected KRANJ

Solution	Activities – Inputs and actions	Solution Maturity - outputs	City performance – outcomes and impacts
Urban Digital Platform with vertical Households – City Municipality of Kranj	Via IOT and various sensors to connect and improve city services	Showing metrics for decision making and management support; monitoring measurements among citizens	New service developed change in the behavior and behavior of citizens (climate neutrality, healthy lifestyle, extension of life expectancy, ...)





Key Performance indicators - Cross cutting indicators for e-connected KRANJ

Cross cutting indicators
Integration of data into the data lake (water, gas, electricity, transport, air quality, noise, counting cyclists, monitoring of communal infrastructure). Cooperation with providers and providers of city services will be important.
Public access to information - strong project communication through existing communication channels
Public participation for easy decision-making - involve citizens to test and use the data on dash board
Financial transparency and accountability - introduce a solution that will be financially sustainable for the budget and public companies
Sharing the experience with other ICC participants

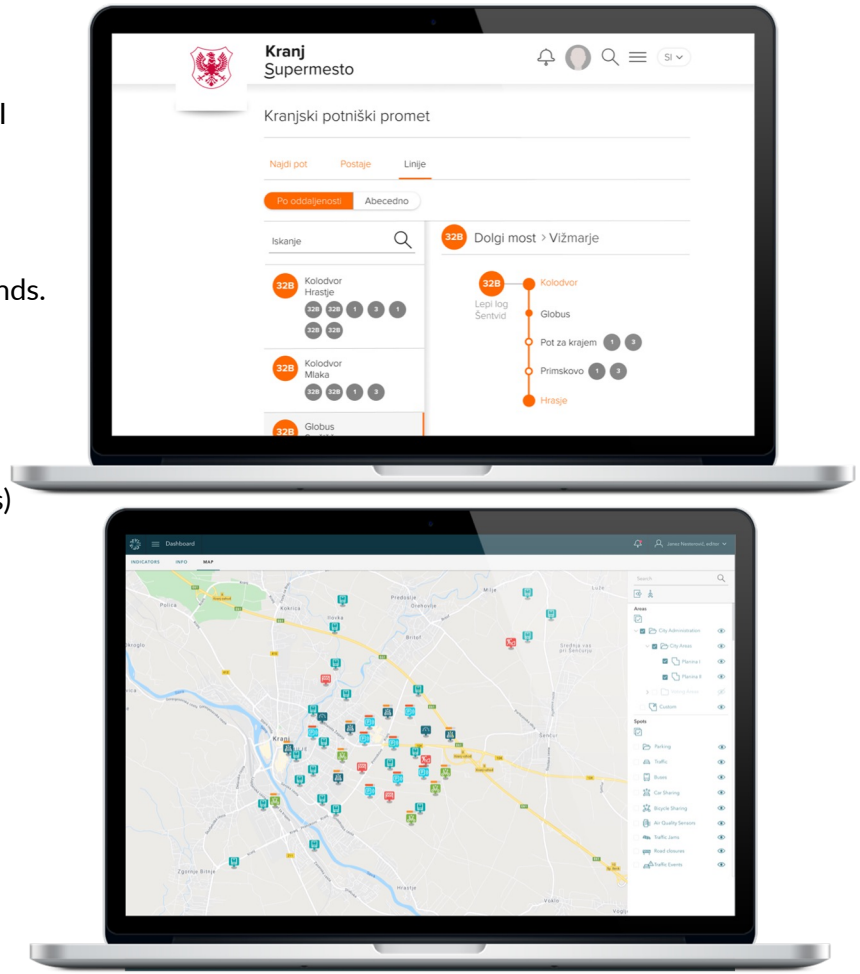
Rationale to KPI approach for e-connected KRANJ

Document the decision-making process for which KPIs are covered in each of the three KPI types, capturing discussions the city has had on, e.g., availability, actionability, validity, etc.

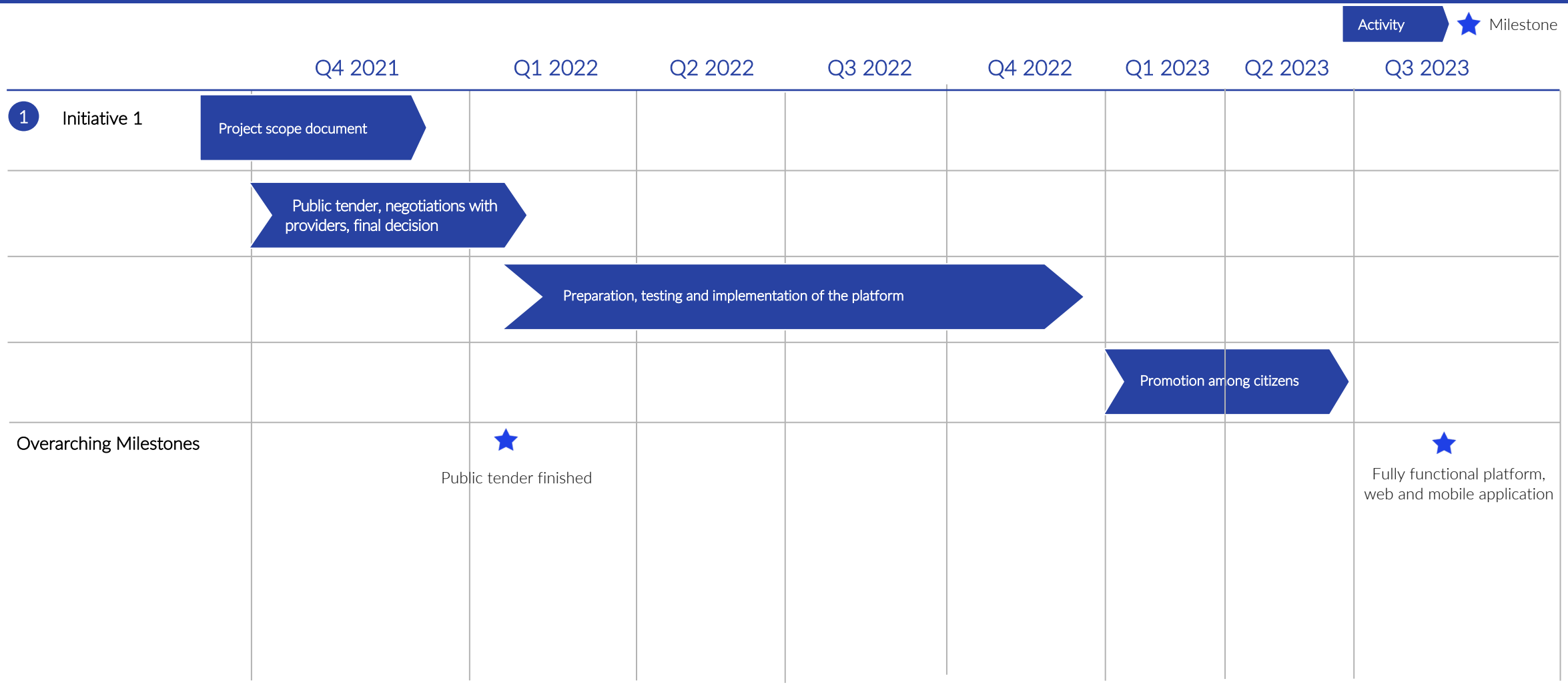
Availability:
July 2022 - start of the project Urban digital platform, financed by municipality budget founds.

Actionability:
2021 - researches existing solutions on the market
2019- 2021 preparation of documentation
2020 - public call (public tender)
2021 – competitive dialogue (four rounds with two registered consortiums of IT companies)
End of 2021– after competitive dialogue – final public call
Jan - June 2022 - negotiations for best solution
June 2022 - contract signed

Validity:
October 2022 – testing period and implementation of first stage of platform
December 2022 - presenting first data on dashboard for city management and citizens
2023 Full use of the new platform and application (dashboard for city administration and citizens)



Roadmap for solution e-connected - Kranj



Initiative charter e-connected MARIBOR

Strategy

Description

What: Sustainable mobility open data platform in Maribor – mobilnost.maribor.si

Why: Providing a single entry point for collecting and managing the open data in the field of sustainable mobility in the city of Maribor

How: Developed as a digital service - a portal, additional module and upgrade of the existing municipal spatial portal

Link to vision

Single entry point to collect, manage and put to disposal the local sustainable mobility data in order to improve the competitiveness of local economy and thus to improve quality of citizen's life.

Link to ambition statement

Prepare a useful digital open data platform with credible databases, to raise the awareness about the importance of sustainable mobility and to contribute to the local economy competitiveness.

Expected impact and timing

Efficient easy-to-access system for collecting data on sustainable mobility in the city of Maribor to put the collected data on disposal as open data. More concrete impact will be in 5-10 years period

Stakeholders involved

Solution lead:

Teams of project partners Municipality of Maribor and University of Maribor

Solution working team:

Teams of both project partners MOM and UM, Municipal department for Traffic and Utility, Municipal GIS department and private solutions providers

Contributors:

All partners, departments and solutions providers

Risks and mitigation

Risks: lack of data, communication among stakeholders and data providers, lack of big picture among the stakeholders

Mitigation: communication and involvement of stakeholders dealing with spatial data, occassional implementation of workshops for stakeholders

Inputs, outputs, outcomes and impacts

Source of funding and estimated cost

Public and EU funds (Interreg Alpine Space co-financed project MELINDA)
85% co-financing rate:
1st stage: 17.000 EUR,
2nd stage: 16.150 EUR

Solution maturity outputs

Solution is actively running. It also contributed to more active databases updates, to spawn or upgrade new similar digital portals (for instance the upgrade of another digital portals such as “Let’s improve Maribor” or “Hey you, participate!”)

City performance outcomes and impacts

New digital service developed – to improve the competitiveness of the local economy by collecting the open data on sustainable mobility in one place. The data bases could be used for developing new solutions, analysis, reviews, apps, etc., and thus indirectly contributing to the quality of life of citizens of Maribor in long term.

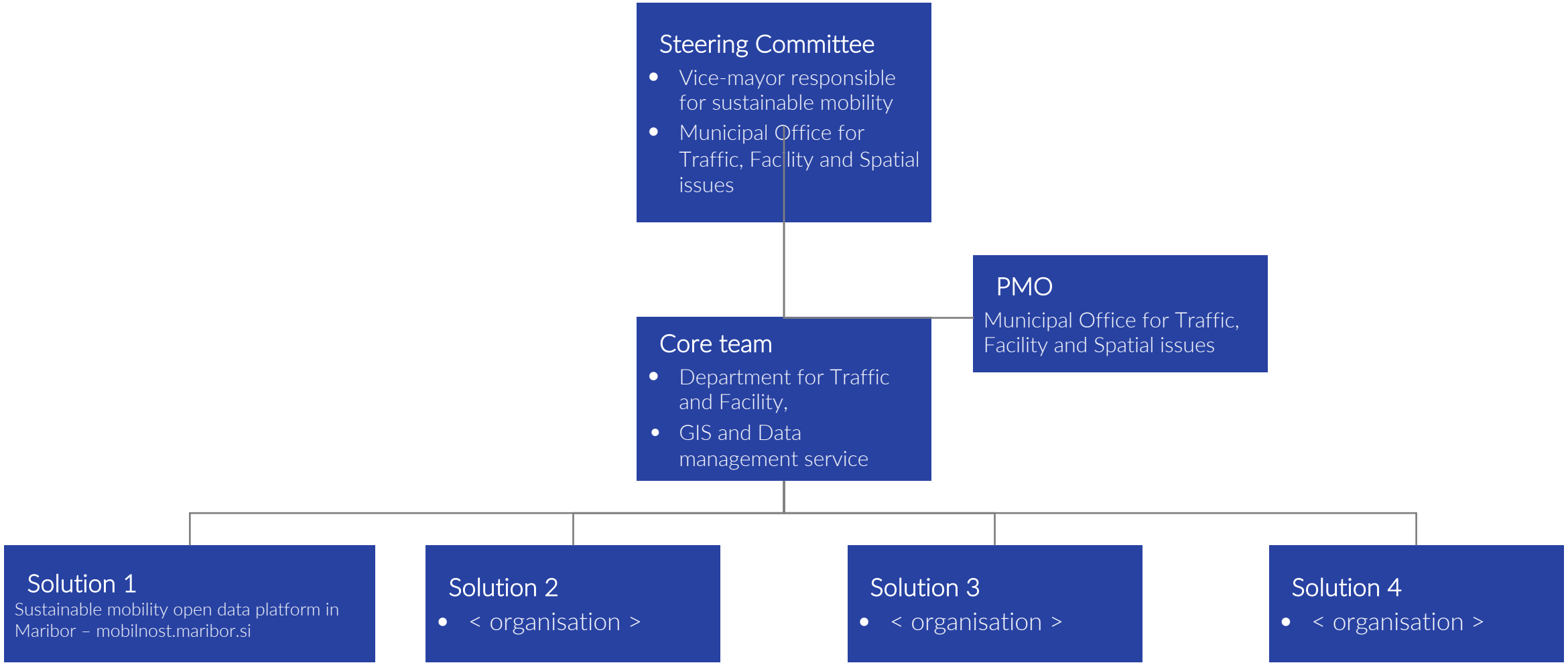
Key Performance indicators - overview for e-connected MARIBOR

Solution	Activities – Inputs and actions	Solution Maturity - outputs	City performance – outcomes and impacts
Sustainable mobility open data platform in Maribor – mobilnost.maribor.si	Upgrade of the municipal spatial portal https://prostor.maribor.si/ with the open data on sustainable mobility module	Improved user experience (implemented service)	New service developed, Tool for easy access to sustainable mobility open data in the city
Sustainable mobility open data platform in Maribor – mobilnost.maribor.si	Collection and implementation of databases	Improved user experience (implemented service)	New service developed Number of new data bases
Sustainable mobility open data platform in Maribor – mobilnost.maribor.si	Examine the travelling habits of citizens via annual surveys	Examine the travelling habits of citizens via annual surveys Improved user experience (new application of service developed), annual survey	New application of service developed Since 2019 City of Maribor in cooperation with University of Maribor is performing an annual survey to examine and monitor the travelling habits of citizens within the European Mobility Week. Indirect motivation to target groups to redefine and change behaviour (to use more environmentally friendly means of traveling the city (on foot, by bike or by bus) thus paving the path to climate neutrality, healthy lifestyle, extension of life expectancy, ...)

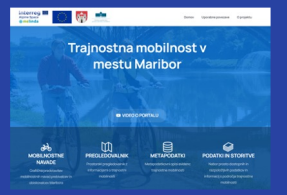
Key Performance indicators - Cross cutting indicators for e-connected MARIBOR

Cross cutting indicators
Integration with other platforms/systems (e.g. access to open data into the spatial platform of the City (sustainable mobility, public transport, air quality monitoring, possibility to count vehicles, cyclists, etc.). Integration with other platforms/systems (e.g. access to open data into the spatial platform of the City (sustainable mobility, public transport, air quality monitoring, possibility to count vehicles, cyclists, etc.).
Public access to data and information
Sharing the experience with other ICC cities

Governance structure for roadmap implementation for e-connected MARIBOR



Roadmap for solution: e-connected



Activity ★ Milestone

	Q2 2020	Q3 2020	Q4 2020	Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022 – Q3 2022
1 Initiative 1	Preparation of documentation	★ Public tender finished						
	Public procurement (public tender) final decision							
		1st stage preparation and implementation			★ 2nd stage completed			
				2nd stage preparation and implementation				
Overarching Milestones						preparation, testing and implementation		
			★ Presentation no.1 and feed back	★ Presentation no.2 and feed back	★ Presentation no.3 and feed back			Full use of the platform foreseen
								★ Full use of the platform (Viewer and display to target groups)

Initiative charter for e-connected CELJE

	Central data platform (CDP), City card application (ACC), Parking management system (PMS)
Link to vision	To be digitally connected in the heart of Europe, a central data platform and city card system is becoming a necessity towards becoming an intelligent city
Link to ambition statement	We will build a common Central data platform, allowing for multiplication of inter-connected citizen centered solutions. We will build first two solutions on the platform: unified City card application and Parking management system.
Description	Establishment of a modern Central data platform (CDP) as a foundation for citizen and visitor centric services for improving quality of life and reducing environmental impact. CDP will support a Parking management system, with real-time parking data and directions from large panels installed on main city roads, thus reducing traffic in historic city centre. City card application will provide a singular and user friendly interface for e-parking and existing e-mobility services like KolesCE, CeleBUS and IJPP.
Estimated cost and source of funding	1.372.397 EUR
Initiative lead	Boštjan Golež
Initiative working team (core team)	Project group: IT department, public tenders officer, transportation and mobility officer….

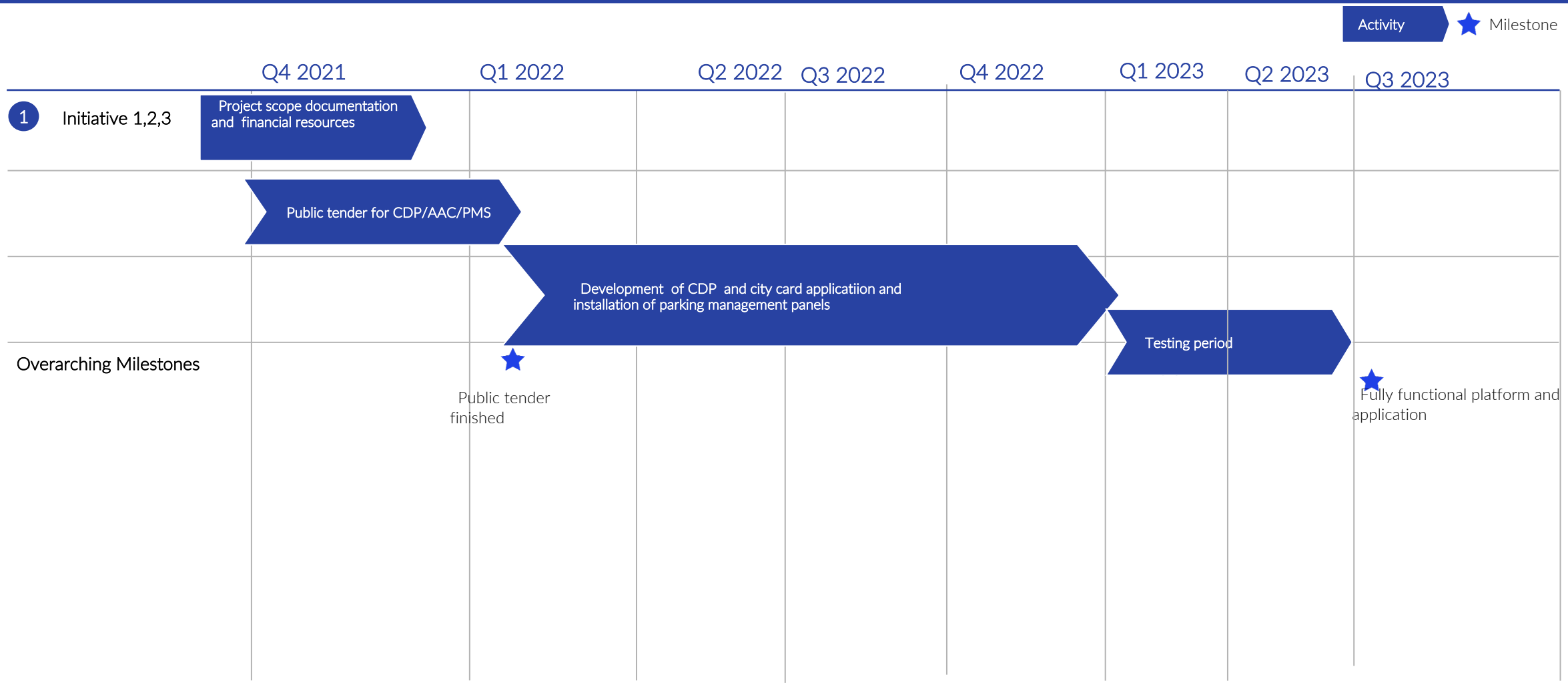
4 Initiative charter for e-connected CELJE

	Central data platform (CDP), City card application (ACC), Parking management system (PMS)
Contributors (stakeholders contributing)	External experts
Ultimate goal and scope of this initiative	New Central data platform, City card application and Parking management system
Major milestones	2019- 2021 preparation of documentation 2020 approval of EU co-financing 07/2021 public tender for system hardware 08/2021 – start of the public tender for CDP & ACC & PMS 11/2021 system hardware delivery, installation and configuration 1.2. 2022– conclusion of the public tender process 2022- installation of PMS panels and developement of CDP and ACC 2023 – testing period of functional platform and application 2023 Full use of the new platform and application
Dependencies	Outside companies, Ministry for infrastructure
Key stakeholders	Employees, experts, leadership, users of public services
Impact and timing	Easier implementation of new services, central point for use of mobility services, centralized data system, real-time parking management End 06/2023
Risks Support needed	Time constraints, public tender process, budget, integration with existis e-mobility solutions Legal and technical experts

4 Key Performance indicators: e-connected CELJE

Solution	Activities – Inputs and actions	Solution Maturity - outputs	City performance – outcomes and impacts
Central data platform	Upgrade of system hardware Development and implementation % of key activities completed on time	Improved user experience for 2 level by Likert scale (Survey before and after)	New service developed Number of new users
City card application	Development and implementation % of key activities completed on time	Improved user experience for 2 level by Likert scale (Survey before and after)	New service developed Number of new users
Parking managment system	Development and implementation Installation of parking management panels	Improved user experience for 2 level by Likert scale (Survey before and after) Less trafic in city centre	Number of parking directions panels and interactive information panels Number of empty parking spaces

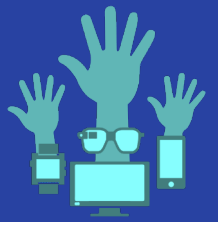
Roadmap for solution e-connected CELJE



Key Performance indicators – Activities for e-connected CELJE

Solution	Initiative	Activities – Inputs and actions
Central data platform	IT department	Citiziens co-creation workshops Developement and implementation
City card application	IT department	% of key activities completed on time
Parking menagement system	Department for Spatial Planning, Transport and Environmental Protection	Installation of parking management panels

KPI– solution maturity (outputs); e-connected CELJE



Solution	Initiative	Solution Maturity - outputs	Targets
Central data platform	IT department	Attractive supportive environment Improved user experience	1000 public employees 15.000 users
City card application	IT department	Improved user experience	15.000 users
Parking menagement	Department for Spatial Planning, Transport and Environmental Protection	Real-time information about empty parking spaces	% reduction of kilometres mileage Reduction of CO2 emissions from passenger car traffic in tonnes (-363 tonnes CO2/per year)

Key Performance indicators: e-connected CELJE

Solution	Initiative	City performance – outcomes and impacts	Targets
Central data platform	IT department	New service developed	1 new service
		Number of new users	1000 public employees 15.000 users
City card application	IT department	New service developed Number of new users	1 new service with multiple modules 1000 public employees 15.000 users
Parking menagement system	Department for Spatial Planning, Transport and Environmental Protection	Number of new real-time parking directions panels	1 new service of parking managemnt 6 interactive information panels 35 real-time parking directions panels

KPI- Cross cutting indicators: e-connected CELJE

Cross cutting indicators
Integration with other platforms/systems (Celebus, Kolesce etc.), Integration with diffrent payment systems (credit cards, , Paypal, Valu, mBills, ...),
Sharing the experience with other ICC participants

Initiative charter e-connected NOVA GORICA in NOVO MESTO

Strategy

Description

What: Sitium - joint city card for Nova Gorica and Novo mesto

Why: Transformation of analog cites public services to digital more efficient and transparent services with community engagement.

How: PPP development activities between both public entities and private solution providers. Implementation in real operation till end of 2022.

Link to vision

Digitalisation of public services for more efficient support to citizens and tourists on everydays needs.

Link to ambition statement

Build a digital ecosystem to accelerate the communication and engagement with citizens on today and future public services.

Expected impact and timing

Efficient public services and community engagement.
Concrete impact will be in 5 years period.

Stakeholders involved

Solution lead:

Development team of both cities.

Solution working team:

Development offices of both cities, general office, Mayor's office, private solutions providers.

Contributors:

All departments and offices and solutions providers.

Risks and mitigation

What are the key risks? confirmation of usability by users

What challenges are likely to arise during implementation? we do not yet have realistic experience and competences and do not yet identify all the risks

What are mitigating measures that are being put in place? Improved user's experience

Inputs, outputs, outcomes and impacts

Source of funding and estimated cost

Private investment: 100.000 €

Solution maturity outputs

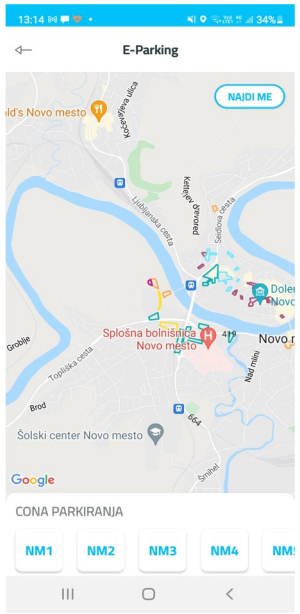
How well a city is using new technological solutions (e.g., increase in broadband coverage, establishment of open data platform and datasets, etc.)
In this case we learnt how to establish the public digital services.

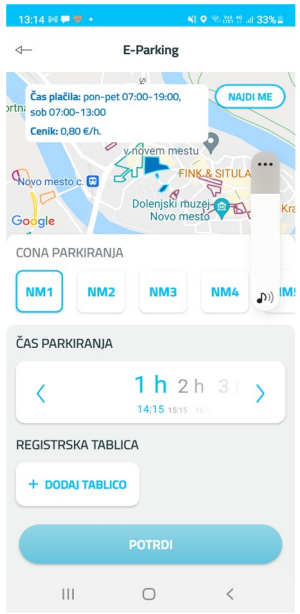
City performance outcomes and impacts

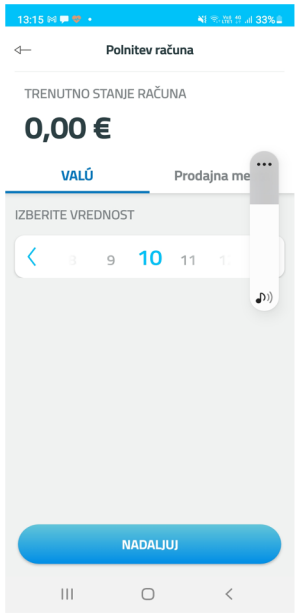
How well a city is performing on outcomes and impacts (e.g., quality of life, air quality, increase of number of jobs, etc.)
This is the one of the first cases on which we will to establish digital measurements of KPI's

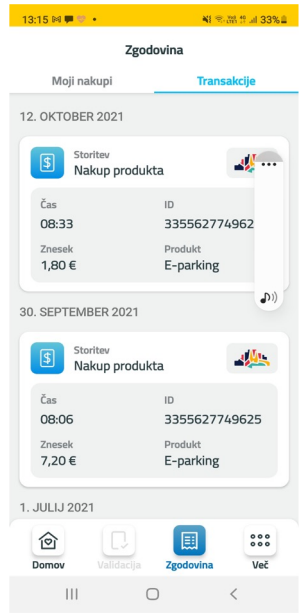
Key Performance indicators - overview for e-connected NOVA GORICA in NOVO MESTO

Solution	Activities – Inputs and actions	Solution Maturity - outputs	City performance – outcomes and impacts
City card application	Development and implementation of key activities completed on time	In public use	number of new users
Parking management system	Development and implementation of key activities completed on time	In public use	number of new users



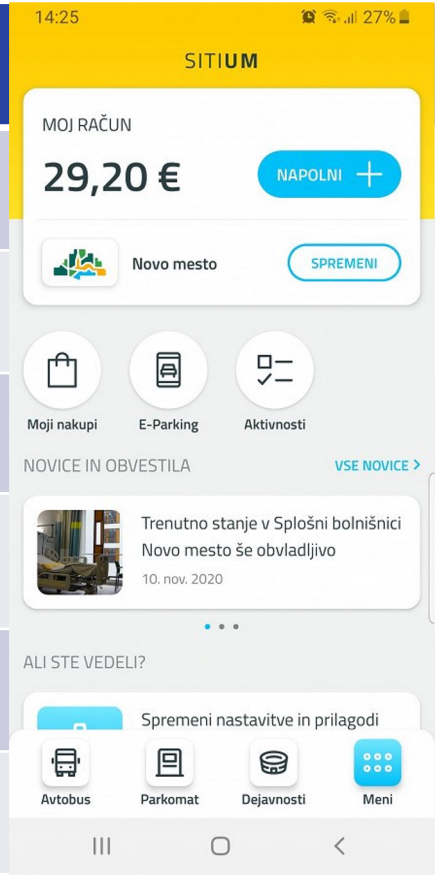






Key Performance indicators - Cross cutting indicators for e-connected NOVA GORICA in NOVO MESTO

Cross cutting indicators
Integration with other platforms/systems (Inpores offending body)
Integration with different payment systems (Valu, mBills, Pay Pal, SMS)
Sharing the experience with other ICC participants



Initiative charter for e-connected Koper

	Integrated traffic management system
Link to vision	To be digitally connected, you need an administration that works in an ecosystem of modern and up-to-date programmes, that are intuitive, allow for an efficient and effective work and serve the needs of employees best, while offering the users an easy method to access services.
Link to ambition statement	We plan to build an integrated traffic management system to govern the specific traffic regimes in the historic city centre. An integrated traffic management system aims to offer users an intuitive and modern tool to access traffic permits and interact with the governing body. The design is focused on being a one-stop shop for all the needs of the inhabitants of the city centre as well as businesses and visitors. A web based solutions ensures ease of use and constant availability, necessary to manage daily life needs. The system will offer a portal between administrative processes (requesting and issuing permits), access control management (physical barriers that limit access) and oversight (control of infractions, data gathering on traffic flows). An important aspect is integrating the system with existing traffic measurement systems through the city thus creating synergy in traffic flow control and balancing pressures on the traffic infrastructure.
Description	The current system used by the municipality is obsolete and serves only the purpose of administration (issuing permits). It's rigid and requires constant tweaking to ensure minimal efficiency. The process for users is cumbersome and requires at least two visits to the offices (to request and receive permits). The system is not connected to existing access controls, which adds another layer of complexity to managing traffic in the city centre. Control over permits use is restricted to physical verification by employees of the municipality and has proven to be somewhat ineffective and does not guarantee a successful management.
Estimated cost and source of funding	40.000 EUR + VAT + yearly cost of maintenance
Initiative lead	Vili Plahuta, Andrej Erzetič, Davor Deranja
Initiative working team (core team)	Department of transportation, IT department

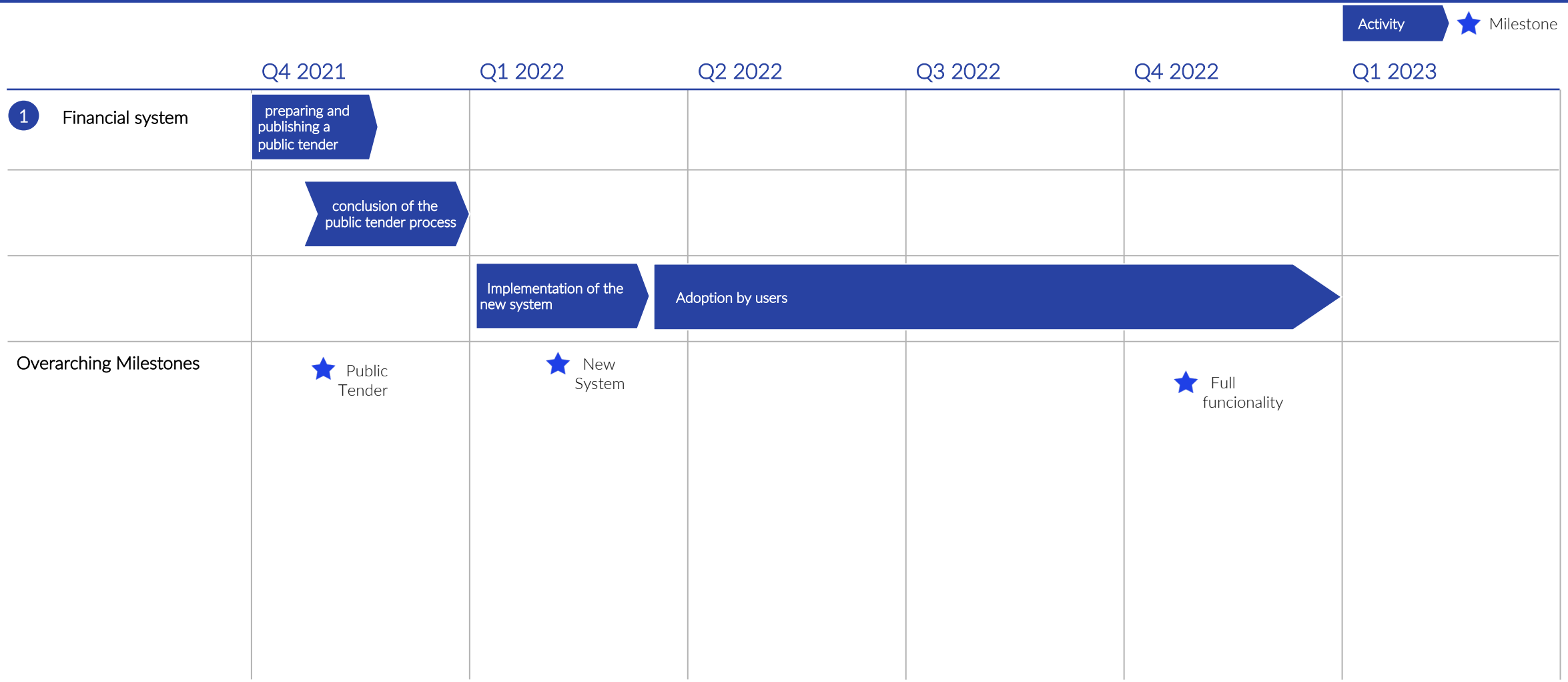
Initiative charter for e-connected Koper

	Integrated traffic management system
Contributors (stakeholders contributing)	External Experts
Ultimate goal and scope of this initiative	An efficient integrated traffic management system the encompasses administration, control and oversight and promotes use of e-solutions to replace obsolete workflows.
Major milestones	30. 9. 2021 – preparing and publishing a public tender 20.10. 2021 – conclusion of the public tender process 28. 2. 2022 – implementation of the new system December 2022 – full adoption by users
Dependencies	Outside companies, other departments within the municipality
Key stakeholders	Employees, experts, leadership, citizens
Impact and timing	A more streamlined process, better control and planning, better resilience to extreme events (faster reaction to incidents etc.)
Risks	Time constraints, poor adoption among users (a parallel system needs to be maintained for users who do not partake in e-services), system complexity and susceptibility to failure
Support needed	Leadership (promoting the solution to users)

1 Key Performance indicators: e-connected Koper

Solution	Activities – Inputs and actions	Solution Maturity - outputs	City performance – outcomes and impacts
Integrated traffic management system	% of key activities completed on time	Improved user experience	New service developed
		Number of connected access control systems, interoperability of data among systems	Number of users

Roadmap for solution e-connected Koper



Key Performance indicators – Activities for e-connected Koper

Solution	Initiative	Activities – Inputs and actions
Integrated traffic management system	Department for transport	Public tender technical requirements
		Existing user data migration
		Traffic management policies

KPI– solution maturity (outputs): e-connected Koper

Solution	Initiative	Solution Maturity - outputs	Targets
Integrated traffic management system	Department for transport	Improved user experience	City Administration, citizens
		Number of user requests sent over e-services	500 users/requests

Key Performance indicators: e-connected Koper

Solution	Initiatiive	City performance – outcomes and impacts	Targets
Integrated traffic management system		New service developed	City Administration, citizens
		Number of users of e-services	500 users

KPI- Cross cutting indicators: e-connected Koper

Cross cutting indicators
Successful integration of traffic-oriented system (flow management, oversight, access control systems)
Feedback from users (user satisfaction gauging)

Initiative charter for e-connected Velenje

	Digital‘s Lokal‘c
Link to vision	To establish a comprehensive digital platform for real-time tracking, optimisation and increased accessibility of our local public transport solution – Lokalc.
Link to ambition statement	We will build upon the blocks already in place and design a solution to make the use of our local transport even easier, more useful and accessible for every citizen and visitor alike.
Description	The platform will be formed around the data we will start gathering through equipping the Lokalc buses with IoT sensors, which will transmit and compile data within the platform (and, when established, the shared data lake). On one hand this means the bus macro location traced by geolocation or GPS and the micromanagement of the bus‘s own interior datasets (number of passengers, % full, ...) on the other. The data will then be collected and used for making future projections based on passenger frequencies entering/exiting at different stations, create prediction models of traffic flows based on different times of commuting and digital twins, optimise routes and arrival times, bus passenger loads, deploy additional resources when needed, etc.. The goal is to provide the residents of Velenje with the most tailormade and easiest to use solution, for using sustainable forms of mobility and public transport. With the real-time tracking of bus capacity, arrival times and routes taken the project aims to enable our citizens for making more informed, data-driven decisions regarding their means of modality (CO2 not emitted and money saved for example). A data driven decision support is imperative for decision makers to fully understand and design efficient solutions in the future. 1st Phase of the project – pilot – equipping 1 bus stop with E-paper displays for RT tracking.
Estimated cost and source of funding	1. Phase Pilot project 4.581,00 + VAT 22% (1.007,82) = 5.588,82 EUR (own funding) 2. Phase evaluation of phase 1 - 0 EUR 3. Phase Equipping all buses and bus stops with displays and tracking equipment 192.402,00 + VAT 22% (42.329,26) = 234.731,26 EUR (own + external funding)
Initiative lead	MOV
Initiative working team (core team)	Informatics department, Department of communal affairs, Department for economic growth and transition

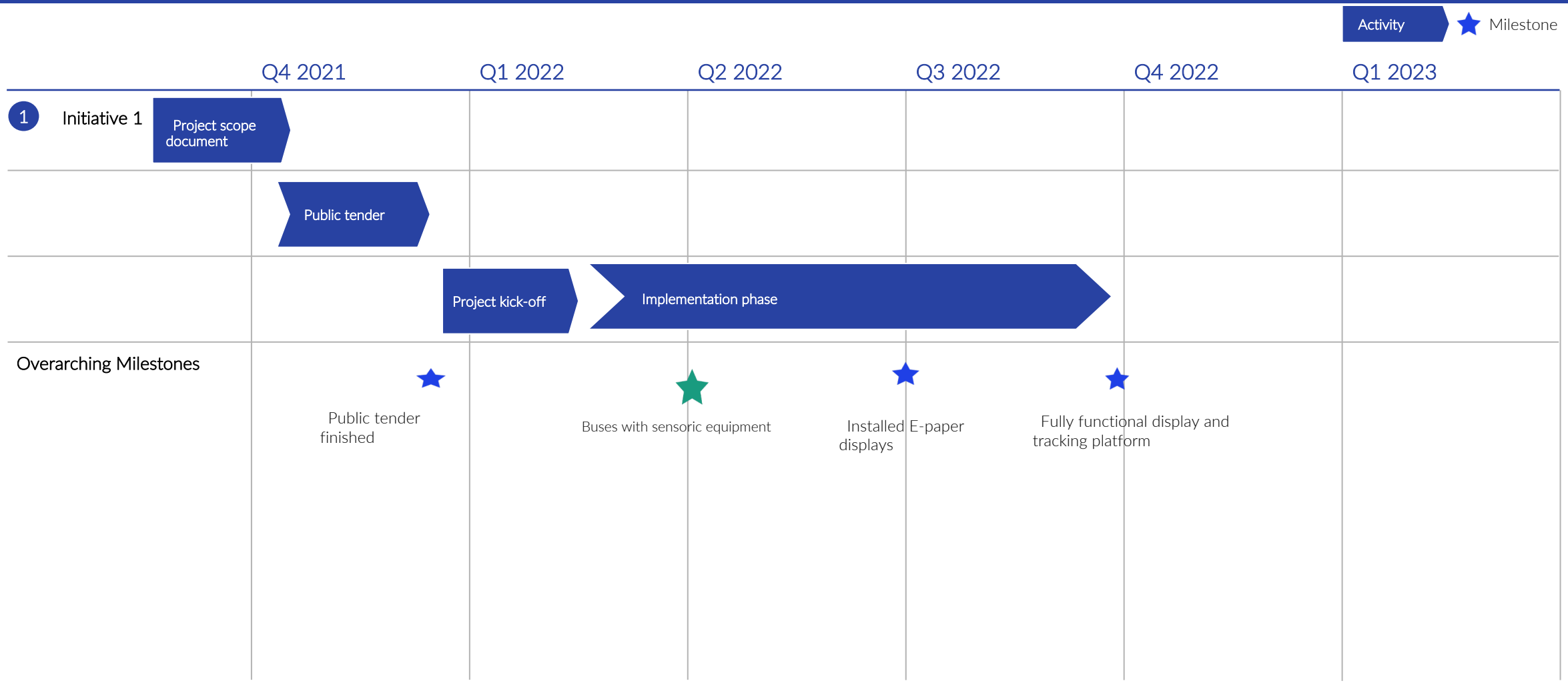
Initiative charter for e-connected Velenje

	Digitalc	
Contributors (stakeholders contributing)	Papercast	
Ultimate goal and scope of this initiative	Established ‚Lokal'c-Digital'c' digital mobility platform	
Major milestones	Phase 1 September 2021 – Project scope document 19. november 2021 – Finished public tender March 2022 – First bus equipped with tracking equipment June 2022 – Installed displays September 2022 – Fully functional display and tracking system	Phase 2 Q4 2022 – Pilot evaluation Phase 3 Q1 2023 -> Funding and installation of tracking and display equipment on the remainder of buses and stops (42 stops, 3 buses)
Dependencies	Continued Lokalc funding	
Key stakeholders	Municipality of Velenje, Nomago	
Impact and timing	A more comprehensive, data-driven approach to solving key bottlenecks and optimisation of the sustainable public transport service infrastructure, increasing accessibility of the service, ease of its use and sustainability of the city	
Risks	Lack of interest of the general public, budget	

Key Performance indicators: e-connected Velenje

Solution	Activities – Inputs and actions	Solution Maturity - outputs	City performance – outcomes and impacts
Digitalc	Number of routes optimised	Data driven improvement of at least 2 routes	New optimised routes and arrival times, improved mobility
	% increase of Lokalc usage	Increase of Lokalc usage by 5%	Increased number of new users,
	% increase in satisfaction of the service	for 2 level by Likert scale (Survey before and after)	Increased satisfaction of users

Roadmap for solution e-connected Velenje



Key Performance indicators – Activities for e-connected Velenje

Solution	Initiative	Activities – Inputs and actions
Lokalc Digitalc	MOV	Improved accessibility of local transport
	MOV	nr. of key activities completed on time

KPI– solution maturity (outputs); e-connected Velenje

Solution	Initiative	Solution Maturity - outputs	Targets
Lokalc Digitalc	MOV	Improved user experience	30.000 citizens

KPI- Cross cutting indicators: e-connected Velenje

Cross cutting indicators
Integration with other platforms (Bicy, shared MOV digital platform)
Sharing the experience with other ICC participants

2 Initiative charter per solution e-competent SiMOS with AUMS

Strategy

Description

Who: Committee for digitalization at AUKM

What: Low digital maturity of local authorities siloed (pilot) solutions of individual services for citizens unsystematic financing of the digital transition lack of resources (staff)

How: increase the intensity of cooperation, exchange of knowledge, experience and good practice examples of local solutions, improve cooperation with national government

Link to vision

To connect people, to collaborate at similar local challenges, to exchange know-how locally (at the heart of Europe), to connect to the national and EU level

Link to ambition statement

1. to build a stable, resilient, sustainable INNOVATIVE DIGITAL ECOSYSTEM of cooperating cities and
2. to strive for a life-long LEARNING OF DIGITAL COMPETENCES of public administration employees

Expected impact and timing

Improved collaboration, better services for citizens, faster, simpler, more cost-effective and more efficient digital transition

Stakeholders involved

Solution lead:

The Digital Development and Smart Cities Committee within the Association of Municipalities of Slovenia

Solution working team:

Representatives of employees at IT or digitalisation department from municipalities

Contributors:

External experts, mayors, researchers, governmental representatives

Risks and mitigation

Lack of resources, availability of staff resources to invest time to the Committee activities

Staff migration (to private sector), unbalanced priorities at different municipalities

Inputs, outputs, outcomes and impacts

Source of funding and estimated cost

Staff cost at local budgets

Solution maturity outputs

Regular monthly meetings (online or in person), joint positions on the allocation of resources in the new financial perspective, joint positions on the coordination of strategies with the State, joint appearance and co-organisation of conferences with the Chamber of Commerce and Industry, joint proposals to political representatives and initiatives for changes in the relevant (national) legislation

City performance outcomes and impacts

The impact of actions will be visible when we also start to integrate e-services for citizens

Key Performance indicators - overview for e-competent

Solution	Activities – Inputs and actions	Solution Maturity - outputs	City performance – outcomes and impacts
The Digital Development and Smart Cities Committee within the Association of Municipalities of Slovenia	regular monthly meetings (online or in person), conferences, cooperation with government	Meetings	better services for citizens, faster, simpler, more cost-effective and more efficient digital transition, financing of employees digital education planned in national budget, cooperation established

Key Performance indicators - Cross cutting indicators for e-competent

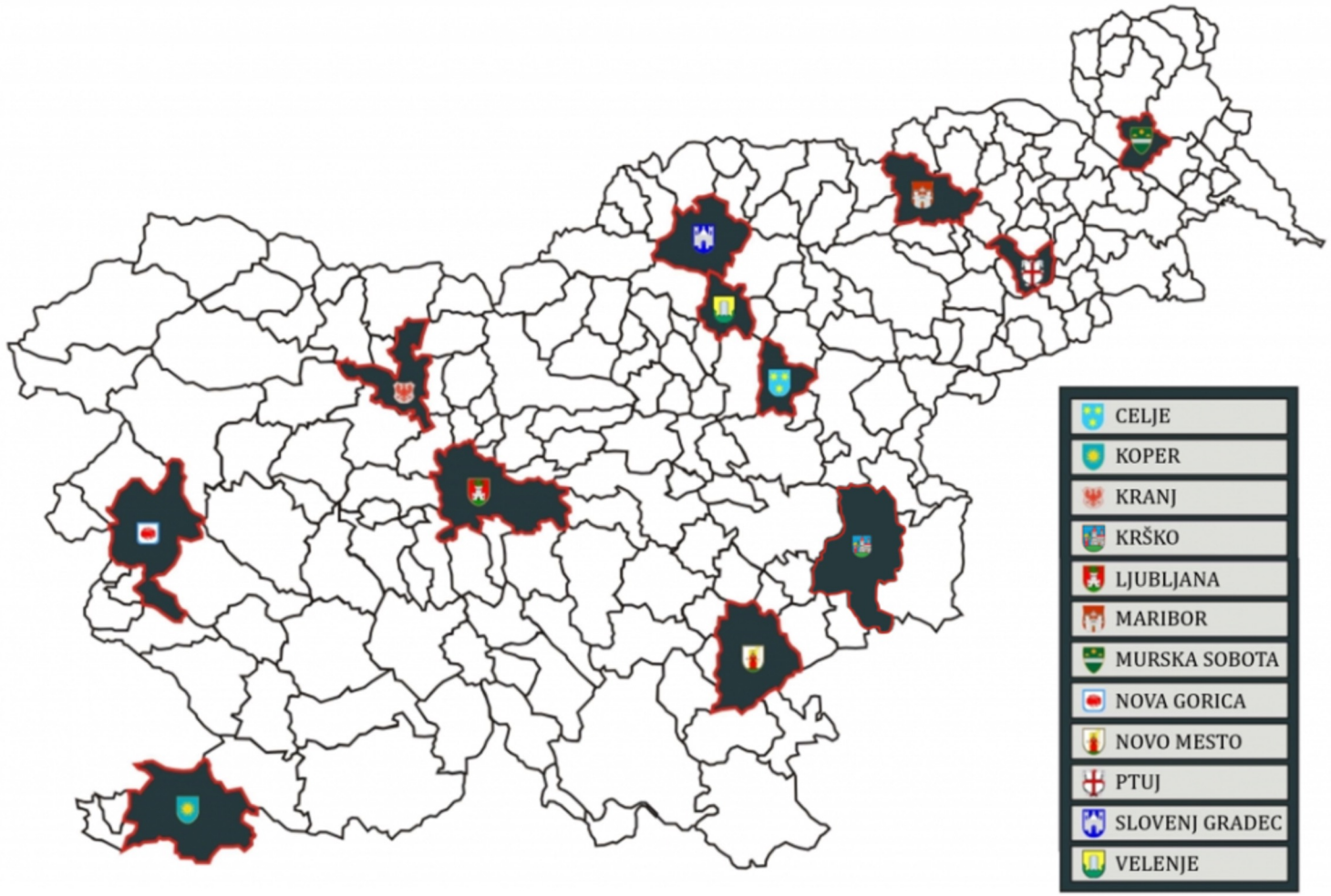
Cross cutting indicators
number of linked solutions, number of joint events and activities, presentation and transfer of new practices and knowledge, networking and cooperation with smaller municipalities

Rationale to KPI approach for e-competent

Availability:
May 2021 - establishment of the The Digital Development and Smart Cities Committee within the Association of Municipalities of Slovenia

Actionability:
2019 - 2021 - occasional meetings of municipal staff in IT departments, meetings and agreements with the government on co-financed projects, proposals for changes to legislation, preparation of a proposal for the establishment of a new committee for the Assembly of Mayors of the Association of Municipalities of Slovenia
2021-2022- regular monthly meetings (online or in person), joint positions on the allocation of resources in the new financial perspective, joint positions on the coordination of strategies with the State, joint appearance and co-organisation of conferences with the Chamber of Commerce and Industry, joint proposals to political representatives and initiatives for changes in the relevant (national) legislation

Validity:
2022 – inclusion of a representative in the strategic group for the preparation of the national strategy for the digitisation of the public sector, inclusion in the preparation of the Operational Programme 2021-2027



3 Initiative charter e-administration in LJUBLJANA

Strategy

Description

- What: Implementation of new Financial system, Document management program and Property management system
- Why: The current programme is not suited for the needs of the municipality, has many deficiencies and does not support fully the needs of the work.
- How: Public tender, testing, adaptation, education and full implementation

Link to vision

To be digitally connected, base line is an administration that works in an ecosystem of modern and up-to-date programmes, that are intuitive, allow for an efficient and effective work and serve the needs of employees best.

Link to ambition statement

We plan to build an innovative digital ecosystem also by improving e-administration systems by implementing new financial application, document management program, applications and other digital solutions (supported by new technologies like AI and blockchain based, BIM, xR), which would result in optimisation and automatization of the processes.

Expected impact and timing

Expected impact: efficient and effective work
When will the solution begin to create impact? after 2 years

Stakeholders involved

Solution lead: Department for digitalisation

Solution working team:

- Accounting department
- General office
- Department for property management

Contributors: All departments and services, also public entities connected to the city administration

Risks and mitigation

- What are the key risks? Migration of the documents, intermittent inoperability during changeovers to new systems
- What challenges are likely to arise during implementation? lack of motivation to learn new skill in specific groups (elder employees)
- What are mitigating measures that are being put in place? Improved users' experience

Inputs, outputs, outcomes and impacts

Source of funding and estimated cost

City budget: 600.000 eur

Solution maturity outputs

How well a city is using new technological solutions (e.g., increase in broadband coverage, establishment of open data platform and datasets, etc.):
- new solution in testing phase, users' experience is recognised as better

City performance outcomes and impacts

How well a city is performing on outcomes and impacts (e.g., quality of life, air quality, increase of number of jobs, etc.)
- Impact is foreseen to be measurable within two years after full implementation.

Initiative charter for e-administration

	Financial system	Document management program	Property management system
Link to vision	To be digitally connected, you need an administration that works in an ecosystem of modern and up-to-date programmes, that are intuitive, allow for an efficient and effective work and serve the needs of employees best.		
Link to ambition statement	We plan to build an innovative digital ecosystem also by improving e-administration systems by implementing new financial application, document management program, applications and other digital solutions (supported by new technologies like AI and block-chain based, BIM, xR), which would result in optimisation and automatization of the processes.		
Description	The current programme is not suited for the needs of the municipality, has many deficiencies and does not support fully the needs of the work.	Ljubljana is currently using an outdated programme with an unfriendly user experience and connectivity issues with other programmes. The National Government is implementing a new document system, which would be of use also to the local governments.	
Estimated cost and source of funding	390.000 EUR + VAT	TBD (reserved 156.000 EUR + VAT)	Cca 54.000 EUR/year
Initiative lead	Saša Bistan	Jasna Dedivanovič	Simona Remih
Initiative working team (core team)	Informatics, Accounting department	Informatics, General office	Informatics, Department for property management

1 Initiative charter for e-administration

	Financial system	Document management system	Property management system
Contributors (stakeholders contributing)	External Experts	Ministry for Public Affairs, External experts	External experts
Ultimate goal and scope of this initiative	New financial programme	New document System	New property management system
Major milestones	1.7.2021 – preparing and publishing a public tender 1.10. – conclusion of the public tender process 30.11.2021 – testing of the new programme 1.1.2022 Full use of the new programme	1.7. 2021 – gathering information about the new government system KRPAN 1.10. 2021 – Testing of the document system 1.1.2022 – Decision about changing the system	1.9. 2021 – Analysis of the needs of users, solution seeking 1.11.2021 – Public tender 1.1.2022 – transfer of data 1.3.2022 – integration with the document and financial system
Dependencies	Outside companies	Government (Ministry)	Outside companies
Key stakeholders	Employees, experts, leadership	Employees, experts, Government, leadership	Employees, experts, leadership
Impact and timing	Easier financial system	Easy to use and integratable document system	Up-to-date property management
Risks	Time constraints, budget	Government not wanting to collaborate	Lack of interest of employees (business as usual)
Support needed	/	/	/

1 KPI: e-administration

Solution	Activities – Inputs and actions	Solution Maturity - outputs	City performance – outcome and impacts
Financial system	Employee co-creation workshops	Improved user experience	New service developed
	% of key activities completed on time	for 2 level by Likert scale (Survey before and after)	Number of new users
Document management system	Employee co-creation workshops	Improved user experience	New service developed
	% of key activities completed on time	for 2 level by Likert scale (Survey before and after)	Number of new users
Property management system	Employee co-creation workshops	Improved user experience	New service developed
	% of key activities completed on time	for 2 level by Likert scale (Survey before and after)	Number of new users

1 KPI – Activities – Inputs and actions: e-administration

Solution	Initiative	Activities – Inputs and actions
Financial system	Reorganization of Department for accounting and financials	Employee co-creation workshops
		% of key activities completed on time
Document management system	Creation of unit in Secretariat of City Administration	Employee co-creation workshops
		% of key activities completed on time
Property management system	Reorganization of Department for property management	Employee co-creation workshops
		% of key activities completed on time

1 KPI – Solution maturity - outputs: e-administration

Solution	Initiative	Solution Maturity - outputs	Targets
Financial system	Department for accounting and financials	Improved user experience	City Administration
		for 2 level by Likert scale (Survey before and after)	200 users
Document management system	Secretariat of City Administration	Improved user experience	City Administration
		for 2 level by Likert scale (Survey before and after)	600 users
Property management system	Department for property management	Improved user experience	City Administration
		for 2 level by Likert scale (Survey before and after)	50 users

1 KPI – City performance - outcomes and impacts: e-administration

Solution	Initiative	City performance – outcomes and impacts	Targets
Financial system	Department for accounting and financials	New service developed	City Administration
		Number of new users	200 users
Document management system	Secretariat of City Administration	New service developed	City Administration
		Number of new users	600 users
Property management system	Department for property management	New service developed	City Administration
		Number of new users	50 users

1 KPI- Cross cutting indicators: e-administration

Cross cutting indicators
No. of projects in collaboration with other ICC Cities (Idrija, SOS)
Project with the Ministry of Public Administration
No. of systems connected with the projects (CADIS, city police programme, …)

Rationale to KPI approach for e-administration

Workshops and trainings are needed to 1 - reduce resistance to change and ease the transition to the new administration through co-creation (end-user involvement) of new solutions; 2 - learn more about work processes and user needs through end-user input, thus maximising the user experience and optimising work processes.

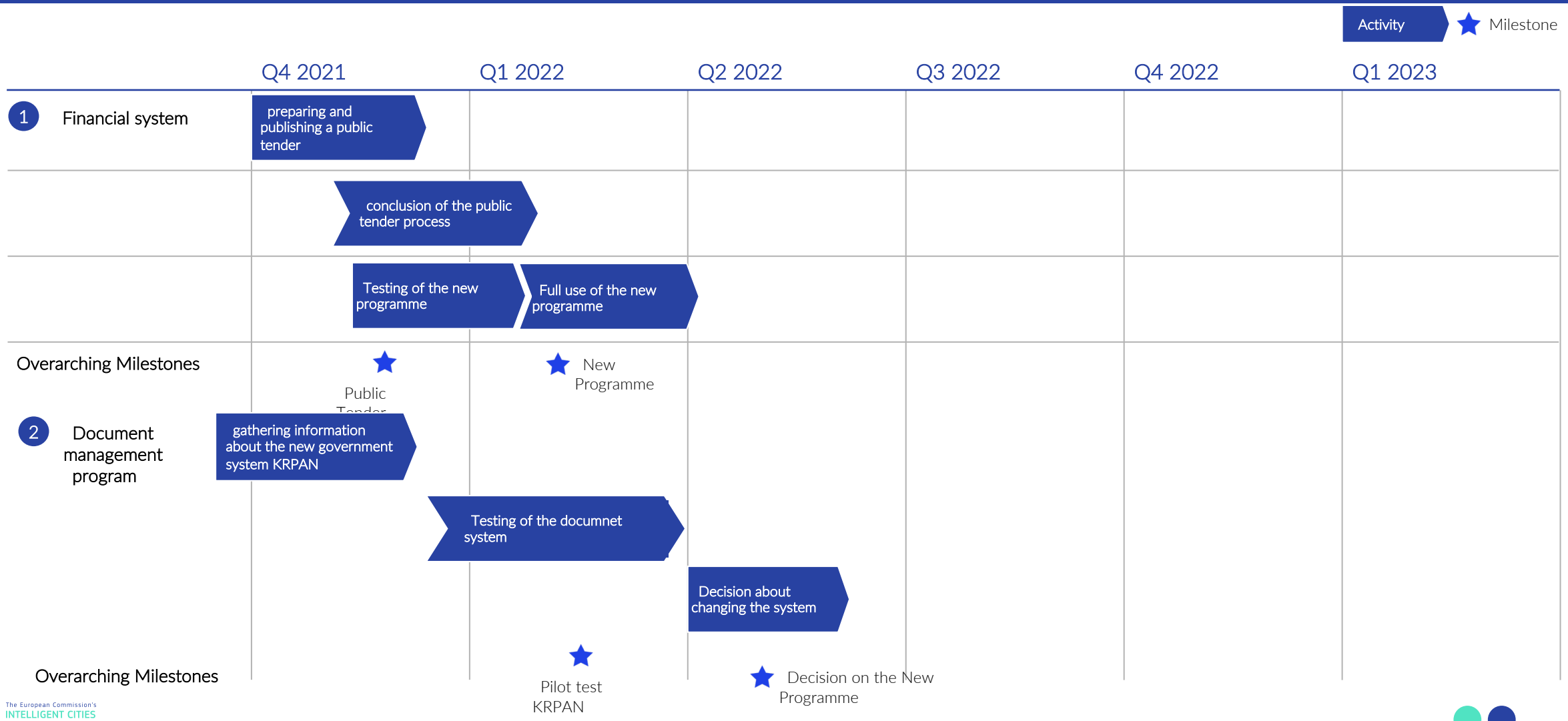
Key performance indicators for the activities implemented are therefore focused on user satisfaction and monitoring of the activities (number of workshops) required for such a co-creative process.

Availability:
July 2021 - start of the projects, financed by municipality budget founds.

Actionability:
2019 - 2021 - researches existing solutions on the market, consultation with other municipalities, pilot testing, workshops
2021 preparation of documentation
2021-2022- public call (public tender), open dialog with providers, testing
end 2022 - contract signed end of transition phase
1.1. 2023 full implementation

Validity:
2022 – testing period and implementation of first stage, adaptation to local needs, trainings
2022 - contract signed, start of transition phase
1.1. 2023 full implementation

Roadmap for solution e-administration



Initiative charter e-participation LJUBLJANA (postponed)

Strategy

Description

What: Improved e-participation and improved UX

Why: Enabling engagement with citizens through modern communications - improving the UX with new technologies such as AR, xR in order to motivate them towards active citizenship, sustainable and healthy lifestyles.

How: Testing possibility to upgrade existing system with new technologies.

Link to vision

Participation of the citizens in our vision to be digitally connected in the heart of Europe is the lifeblood that fuels the heart, beating with life and is a necessity in any forward thinking public administration.

Link to ambition statement

We want to connect digital solutions to the real needs of citizens and also follow the possibilities of the new technologies.

Expected impact and timing

Expected timing had been set for end of 2023. But the project is at the moment postponed due to cancellation of national confounding.

Stakeholders involved

Solution lead

Department for digitalization

Solution working team

Department for transport

Contributors:

Research institute, xR developers

Risks and mitigation

Since the existing solution is active, no high priority was set for this project.

Lack of resources (financing, staff availability)

Inputs, outputs, outcomes and impacts

Source of funding and estimated cost

The source of funding and an estimate of the cost: 50.000 – 100.000 EUR, Co-founding had been foreseen

Solution maturity outputs

Since Co-founding was cancelled, project is postponed.

City performance outcomes and impacts

Since confounding was cancelled, project is postponed.

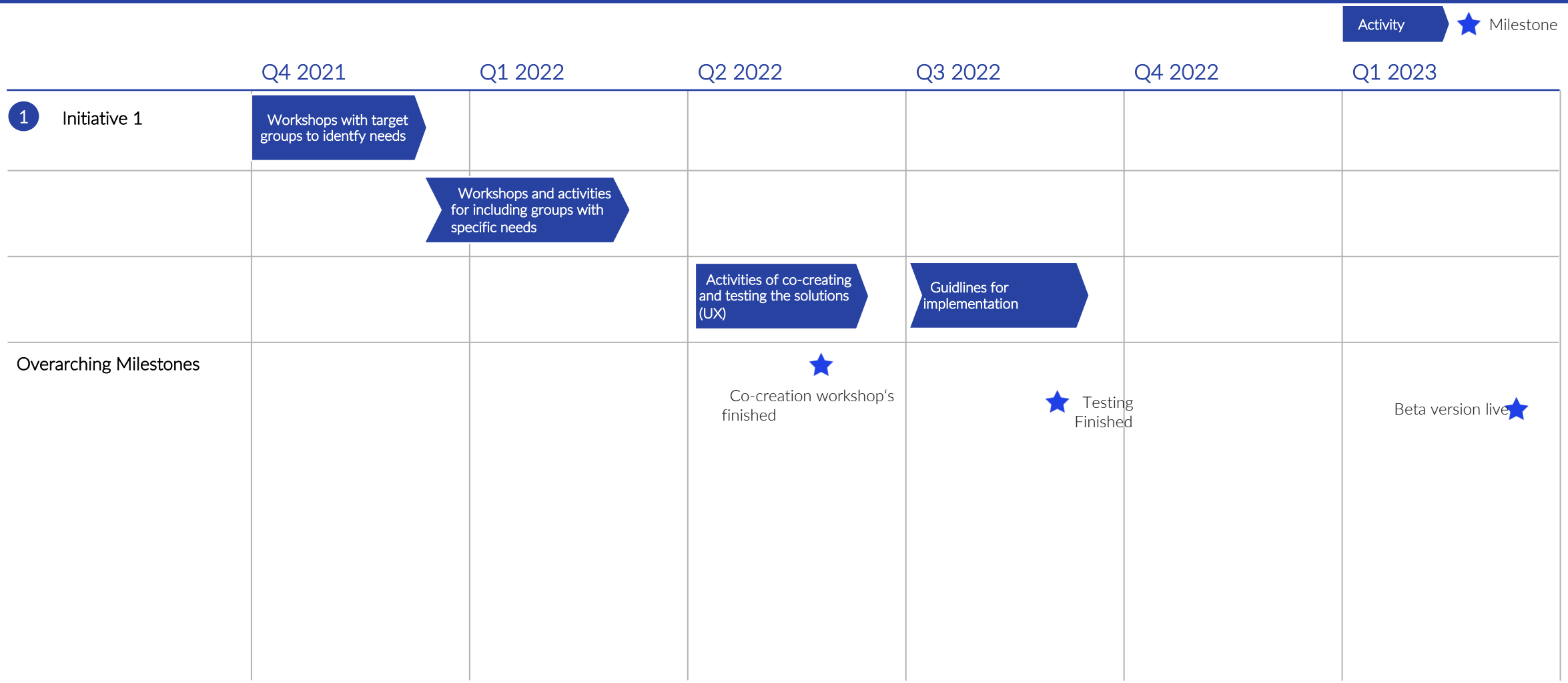
3 Initiative charter for e-participation Ljubljana as planned

	E-participation
Link to vision	Participation of the citizens in our vision to be digitally connected in the heart of Europe is the lifeblood that fuels the heart, beating with life and is a necessity in any forward thinking public administration.
Estimated cost and source of funding	50.000 – 100.000 EUR
Initiative lead	Arian Debeljak
Initiative working team (core team)	Sabina Popit, Alenka Rebec
Contributors (stakeholders contributing)	NGO's, External Experts
Ultimate goal and scope of this initiative	Guidelines for UX for MaaS (Mobility as a Service)
Major milestones	31.3.2022 – Co Creation workshop finished 31.12.2022 – Testing Finished 30.6.2023 Beta version live
Dependencies	MJU MLADOST (Project)
Key stakeholders	Citizens, People with disabilities
Impact and timing	Improved e-participation and improved UX End 30.6.2023
Risks	Ensure finance, Citizens low motivation
Support needed	Workshops organization by NGO, External experts advisory

3 Key Performance indicators e-participation Ljubljana as planned

Solution	Activities – Inputs and actions	Solution Maturity - outputs	City performance – outcomes and impacts
Guidelines for UX for MaaS	Citizens' co-creation workshops	Improved user experience	New service developed in line with guidelines for UX

Roadmap for solution e-participation Ljubljana as planned



Key Performance indicators – Activities for e-participation Ljubljana as planned

Solution	Initiative	Activities – Inputs and actions
Guidelines for UX for MaaS	MLADOST	Citizens co-creation workshops

KPI– solution maturity (outputs); e-participation Ljubljana as planned

Solution	Initiative	Solution Maturity - outputs	Targets
Guidelines for UX for MaaS	MLADOST	Improved user experience	For 2 level by Likert scale (Survey before and after)
			3 of developed functionalities for users with disabilities

Key Performance indicators: e-participation Ljubljana as planned

Solution	Initiative	City performance – outcomes and impacts	Targets
Guidelines for UX for MaaS	MLADOST	New service developed in line with guidelines for UX	63.000 of new MaaS users
			200 of users with disabilities

KPI- Cross cutting indicators: e-participation Ljubljana as planned

Cross cutting indicators
Co-creation of Guidelines together with 2 ICC Cities (Idrija, SOS)

3 Key Performance indicators for e-participation Ljubljana as planned

Solution	Activities – Inputs and actions	Solution Maturity - outputs	City performance – outcomes and impacts
Guidelines for UX for MaaS	Citizens co-creation workshops	Improved user experience	New service developed in line with guidelines for UX
	% of key activities completed on time	for 2 level by Likert scale (Survey before and after)	Number of new MaaS users
	Number of workshops deployed	Number of developed functionalities for users with disabilities	Number of users with disabilities

The European Commission's
INTELLIGENT CITIES
CHALLENGE

Section

3+4

SiMOS : Impact

ICC Transformation

February 2021 to May 2021

European Commission | The Intelligent Cities Challenge is funded by COSME, the EU programme for Competitiveness of Enterprises and SMEs

Impact executive summary

- The main successes that should be highlighted is:

➡ a good **stakeholder ecosystem** in place: cooperation between municipalities, the national Digital Transformation Service, a network of digital development NGOs, research institutions and universities, and businesses. Areas of cooperation implemented: joint strategic, legislative and project planning, joint organisation of congresses and expert meetings, informal cooperation to exchange views and good practices.

- The major obstacles to be aware of were:

➡ cancellation of expected calls, transition period between the two financial frameworks, COVID conditions, lack of interest of digital development professionals to work in the public sector.

- Progress against the KPIs

➡ The design and implementation of projects using the ICC methodology was difficult and sometimes constrained by the nature of the consortium, which brought together 11 urban municipalities. The knowledge, capacities (human and financial) and needs still differ greatly between the municipalities and it was most important during these years to learn about our common needs and possibilities. The KPIs are detailed in section 3 at the level of the individual projects implemented, but in general it is considered that, due to delays for various reasons, they have not yet been achieved to the extent expected.

- Next 3 years:

e-connected

Building a shared digital infrastructure - With the Government Digital Service and representatives of municipalities. Over the next year, we will prepare investment documentation and an action plan for connecting and sharing existing infrastructure.

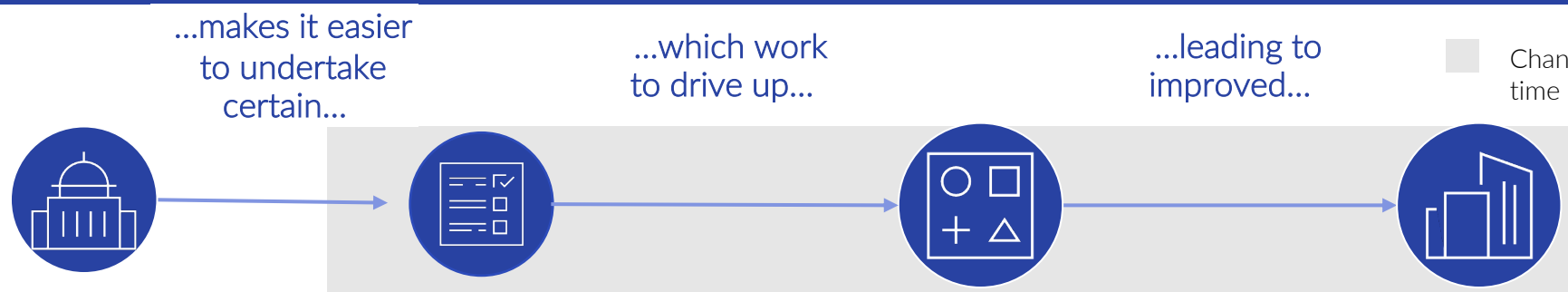
e-competent

In the planned financial framework 21-27 and the national budget, the Slovenian government has included significant resources for education, digital inclusion and key digital competences, all with the aim of reducing the digital literacy gap. Municipalities have been made eligible for funding. This will allow us to expand our digitial education programme for staff and citizens.

e-administration & e-participation as e-governance

In cooperation with the national Digital Development Service and the Ministry of Public Administration, we are already testing, adapting and planning the sharing of e-government programmes and modules at local level.

There are four types of measurable concepts that come together to drive success in the ICC



Idea	Local enablers – city characteristics	Activities – actions and inputs	Technology maturity – outputs	City performance – outcomes and impacts
Description	The key strength of the ICC's success is the strong integration of municipalities and cooperation on joint projects in the past. Weakest moment would be lack of own resources to digitise the local community government; collaboration is thus crucial.	The ICC was a pivoting point in the joint effort of the Urban municipalities to build an innovative digital ecosystem of cooperating cities. Thus a Committee for digitalisation and Smart cities was formed that meets every month, sharing good practices, experiences etc.	Most cities are in a phase of digital transformation with emphasis on core informations systems in use, boosted with new technologies that enable interoperability and seamless data exchange (Data Platforms).	ICC helped foster a creative and interconnected environment of Urban Municipalities of Slovenia that will allow for a seamless integration of services between all the biggest cities in Slovenia, resulting in a better user experience for the citizens.
Example	A history of strong collaboration between cities - municipalities via AUMS.	Analysis of the state of the art, cities needs and feasibility assessment.	Exchange and transfer of knowledge and experience with different technologies and providers.	Ecosystem of cities and stakeholders, knowledge transfer, joint market research for digital solutions (city cards, digital platforms etc.).

Assessment of SIMOS consortium performance - discussion

First of all, all 11 Urban Municipalities formed a consortium that was included in the ICC, which posed several challenges: added complexity, number of stakeholders, challenging use of one-city-centric ICC methodology etc. Nevertheless, numerous city funded projects were realised during the duration of the ICC that made a difference in everyday life of the citizens.

In addition, the ICC proved valuable as platform that boosted the **cooperation of the biggest cities** in each of the region of Slovenia that will ideally lead to a **seamless integration of various solutions** such as city cards and urban digital/data platforms, which will greatly **improve the user experience** (UX), especially for daily commuters (e.g. roughly ⅓ or more than 100.000 of daily inhabitants of the City of Ljubljana come from other parts of Slovenia) but also for any other migrations between municipalities, tourists at the forefront.

We organised the solutions in two overlapping areas: city cards and urban platforms, both leading to improved e-services of the citizens:

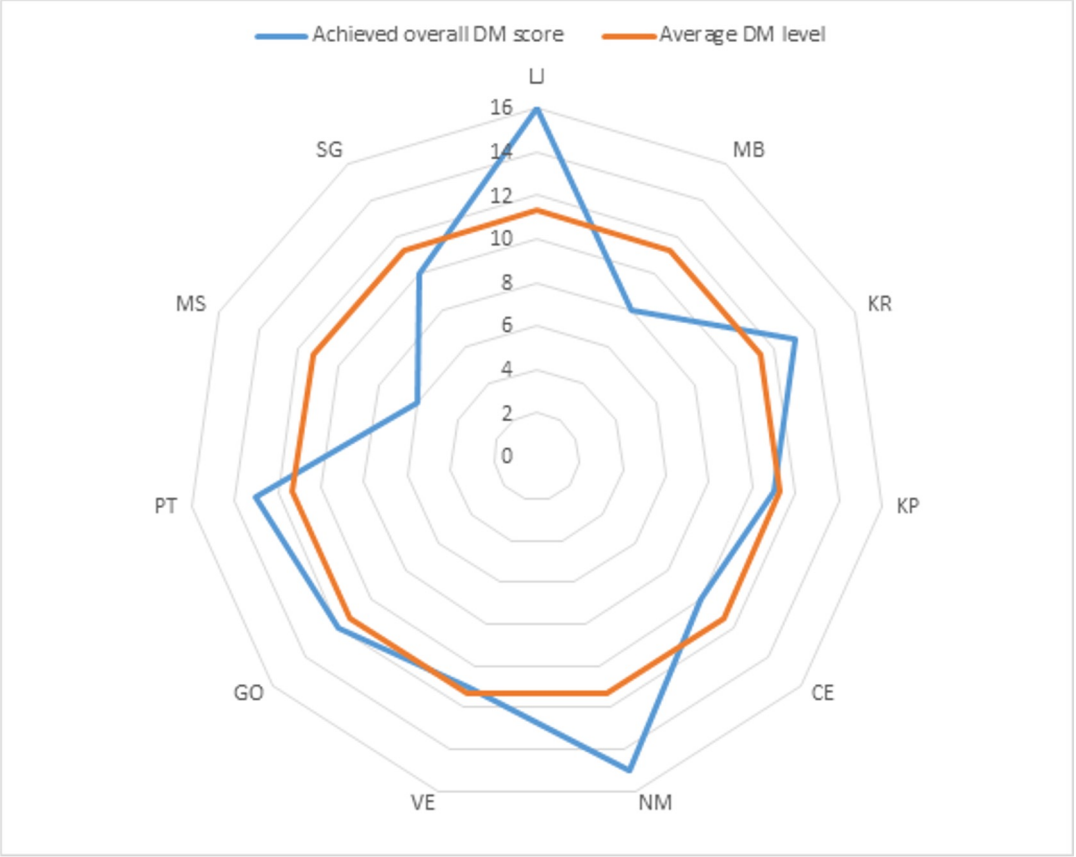
- city cards: Nova gorica and Novo mesto formed an integrated joint city card
  Ljubljana is upgrading its successful city card according to new trends and technologies

- urban platforms: Maribor, Velenje and Celje realised a mobility platform,
  Kranj and Ljubljana are in the first phase of building a comprehensive digital platform
  Koper has an integrated traffic management system

Assessment of SIMOS consortium solution maturity - discussion

The solutions of Urban Municipalities of Slovenia are at **different maturity levels** and **speeds of adoption** that are correlated with existing digital infrastructures in the cites, city budgets, staff resources, market availability, political support for the implementation etc.

In the duration of ICC, a comprehensive **analysis of the digital maturity** was conducted. The conclusion was that the ICC digital maturity model (ICC DMM) of the municipality is also the basis for smart city transformation, and municipality's inherent capabilities in terms of local enabler and provider of public services. Furthermore, sharing ICC DMM evaluation results among municipalities is of great usefulness, as it enables comparison with others, especially those which are most advanced in terms of digital transformation (DT), and makes those seeking counsel better aware of best practices, leading to less mistakes, better interoperability, data exchange, leading to improved DT results.



Based on ICC digital maturity survey, the graph shows overall achieved DM levels of each Urban municipality compared to Average DM of all.

Assessment of SIMOS ecosystem and activities - discussion

Based on the findings of the ICC digital maturity survey, a **strong cooperation among municipalities** in the area of digital transformation (DT) is suggested as the results will help individual municipalities to create **better public policies** based on its own digital maturity (DM) and experiences of other municipalities, their DM and their (proven successful) policies.

One of the key findings of the SIMOS consortium was also, that the success of projects is only possible with **appropriate organisational structure** in each individual city (digital development has to be an individual office and not only part of ICT support) with dedicated employees in each city for digital development that collaborate weekly. Only in this fashion can an integration of municipalities and cooperation on joint projects be realised.

The above mentioned backbone of interconnected city professionals has to be boosted with experts from the **research and education sector** (Universites, research institutions, academia, digital innovation hub) and the **private sector** (Chamber of Commerce, GAIA-X-HUB etc.).

5 key lessons

Lesson	Reflections
1	Cooperation between comparable cities fosters digital development. Cooperation relies on people and their knowledge.
2	Political and management support of digital development is a must.
3	City budgets are too limited to allow for a comprehensive digital transformation. Systematic nation-wide financing must be defined and provided.
4	External experts from both academia and private sector must be included in strategy creation and project formation before public tendering.
5	End users (citizens) must be included in the first phase of the development of digital solutions.

3 Year plan - ambitions

Building on the ICC, what would will the consortium aim to achieve in 3 years time?	We would like more connections between city cards, interconnected platforms, both leading to happy, creative and sustainable citizens in all of the 11 (now 12) Urban Municipalities.
What steps will you take over the next 3 years to achieve these goals?	Regular meeting of the Committee for digital development and Smart cities, a body of Association of Urban Municipalities of Slovenia, cooperation with NGOs, Government Office for Digital Transformation, Research and education sector and research institutions etc.