

The European Commission's
**INTELLIGENT CITIES
CHALLENGE**

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City of Split: Intelligent City Transformation Overview

ICC Final Deliverable



Executive Summary

Key facts

Split is the second largest city as well as second largest municipality in Croatia with 162.873 inhabitants according to 2022 census. the largest city on the Croatian Adriatic coast and the centre of Urban Agglomeration Split. Main objective of City of Split is to represent all the citizens, improving the quality of their life, protecting the more disadvantage ones, promoting the economic development of the local system. City of Split, as a local government organization, has 12 departments employing 440 persons with annual budget of approximately 150 million euros. Due to its location and a mild Mediterranean climate with 2700 hours of sun and more than 300 sunny days per year, city of Split has a great renewable energy resources potential.

City's vision and ambition

City of Split would become a green city with a diversified economy that locally develops and implements sustainable solutions for the benefit of its citizens. The ambition of the City is to digitalized public administration system that provides better services for citizens, to become a city of knowledge by encouraging citizen participation in planning, and developing talents in digital economy via living green labs and to initiate a cross-sectoral digital transition and to facilitate development of new technologically innovative solutions for economic growth and citizen wellbeing

Executive Summary

City's challenges

In order to achieve its vision and objectives of a local digital and green transition, the City of Split has to overcome following challenges:

- Silos across City departments requiring improved efficiency and optimization of city services
- Energy sufficiency and decarbonization of local economy

Prioritised solutions

Digital services platform that will facilitate digitalized and horizontally integrated public administration system which will improve connectivity and effectiveness and will create easy access for citizens.

Increasing the use of solar energy by upgrading GIS infrastructure to be achieved through mapping the rooftop solar potential of the city and deploying the Pilot building to serve as an example.

Mayor Foreword

City of Split has started to implement many smart city projects thus improving the quality of life for its citizens. Many of the plans and activities are being realized, including digitalization of energy systems, digitalization of government services, green mobility and enhancing the bicycle network, intelligent transport systems, traffic security video surveillance systems, modernization and management of public lightning system, energy renovation of publicly owned buildings, modernization of the municipal waste management. Improving the public green spaces is a project that consists of activities that can also include citizens to directly participate in greening and cultivating. Split also offers free WiFi for visitors and inhabitants on many city locations.

City of Split participates in various European funded initiatives and projects which results in raised awareness and developed ideas within sustainable urban transport, digitalization of public services, energy efficiency, green infrastructure and urban management. Moreover, participating in EU projects provided the City with benefits such as increased capacity and knowledge of local actors / partners implementing those projects, which resulted in development of innovative ideas for future projects and actions.

By participating in the ICC initiative City of Split expects to have a chance to learn from partner cities and their best practices on how to develop projects for solving challenges our Split is facing.

At the same time we expect to scale up the visibility and recognition of the city of Split thus making it possible to future business and cooperation possibilities.

Section

1

September 2020 to January
2021

City of Split: Preparation and assessment

ICC transformation



Introduction / Key facts and overview of the city

Split is the second largest city and also second largest municipality in Croatia with 162.873 inhabitants according to 2022 census Split is the largest city on the Croatian Adriatic coast and the centre of Urban Agglomeration Split. As an important Croatian and Mediterranean cultural, university, economic and sport centre, Split has great spatial, professional, scientific and productive potential which represents the cornerstone of the future city's development with aim to become the driving force of the development of the region. The city's primary competitive advantage, which needs to be further enhanced, is in sustainable and self-sufficient energy production and IT entrepreneurship.

City of Split strives to become an urban environment that connects industry, administration, university and community with the aim of building tangible and intangible infrastructure characterized by digital development and integration, security, circular economy and green industry, sustainable construction, green environmental architecture and solutions from nature, smart traffic, recreational facilities and culture of living, civil involvement and the absence of urban poverty.

State of the city overview: Split

Significant of insight to what we want to do on the ICC

○ Of critical importance to ICC journey and we should be working to change

◐ Of importance to ICC journey, and we should act to change this along the journey as opportunity presents

◑ Contextually relevant, but not major point of attention in ICC and unlikely to be impacted on the journey

The state of our city today

The city of Split has significant potential of achieving all important aspects of becoming a Smart city. The existing urban infrastructure, environment, recreational zones, waste and water management, degree of ICT integration provide a very good starting point for further progress in terms of developing and implementing smart solutions.

City of Split as a local public administration has recognized the need to establish a smart city infrastructure and has launched numerous projects in this regard which resulted in raised awareness of issues such as sustainable urban transport, digitalization of public services, energy efficiency and housing and urban management.

By participating in the ICC initiative we expect to have a chance to learn from peers how to develop solutions for solving challenges the city is facing, in particular from the cities of similar historic development; being a Mediterranean city with historical centre and rich cultural heritage that needs to be protected while developing future solutions. At the same time we expect to scale up the visibility and recognition of the city of Split thus making it possible to future business and cooperation possibilities.

Key insights from city performance analysis

Higher performance observed

- 1 Digitalization of City of Split public activities and internal processes to optimise points of contact with stakeholders has high political incentive
- 2 City of Split has developed basic GIS. Moreover, the city is well covered by fiber optic infrastructure (backbone ring + interconnection estuaries)
- 3 City of Split has a great energy transition potential towards renewable energy resources and the usage of natural inputs for greener industry. Moreover, the City plans to develop a system for measuring use of renewable energy which is non existent at the moment .

Lower performance observed

- 1 Uneven level of digitalization of crucial stakeholders, no formal commitments by stakeholders to implement strategic goals
- 2 GIS needs to be significantly upgraded. In order to manage the fibre optic infrastructure it is necessary to develop processes and tools that would facilitate its use.
- 3 Energy transition is not well communicated to the wider community since there is a lack in education and guidelines for gaining subsidies in particular for local SMEs

Executive summary of city needs

The City of Split is currently mostly dependent on tourism and connected industries. To become sustainable, there is an urgent need for diversification of its economy. Digital transformation in key areas such as public services along with use of its enormous solar potential will help move the city forward. Thus, in order to become a green city with a diversified economy that locally develops and implements digital and sustainable solutions for the benefit of its citizens, the necessary steps to be taken is increase efficiency of its public administration as well as increasing the use of solar energy by upgrading city's GIS infrastructure by mapping the city's rooftop solar potential.

Infrastructural and **digital transformation**, in addition to optimization of city processes, are needed to help develop integrated public administration system which will improve connectivity and effectiveness of the administration thus facilitating innovation and new economic activities. As a coastal city, climate change is of importance to the city and the plan is to localize the EU Green Deal through stimulating the adoption of renewable energy sources. Creating a **Solar map and beginning the process of increasing the use of solar energy** will add value to the city and contribute to its sustainability.

The ICC solutions that the City has decided to develop are intentionally cross-sectoral in order to achieve faster adaptation. The ICC initiative will enable the city to better utilize available talents in the local ecosystem to strengthen its economy. An economy that generates added value is one with connected Universities, Government, Industries and Citizens through digital networks.

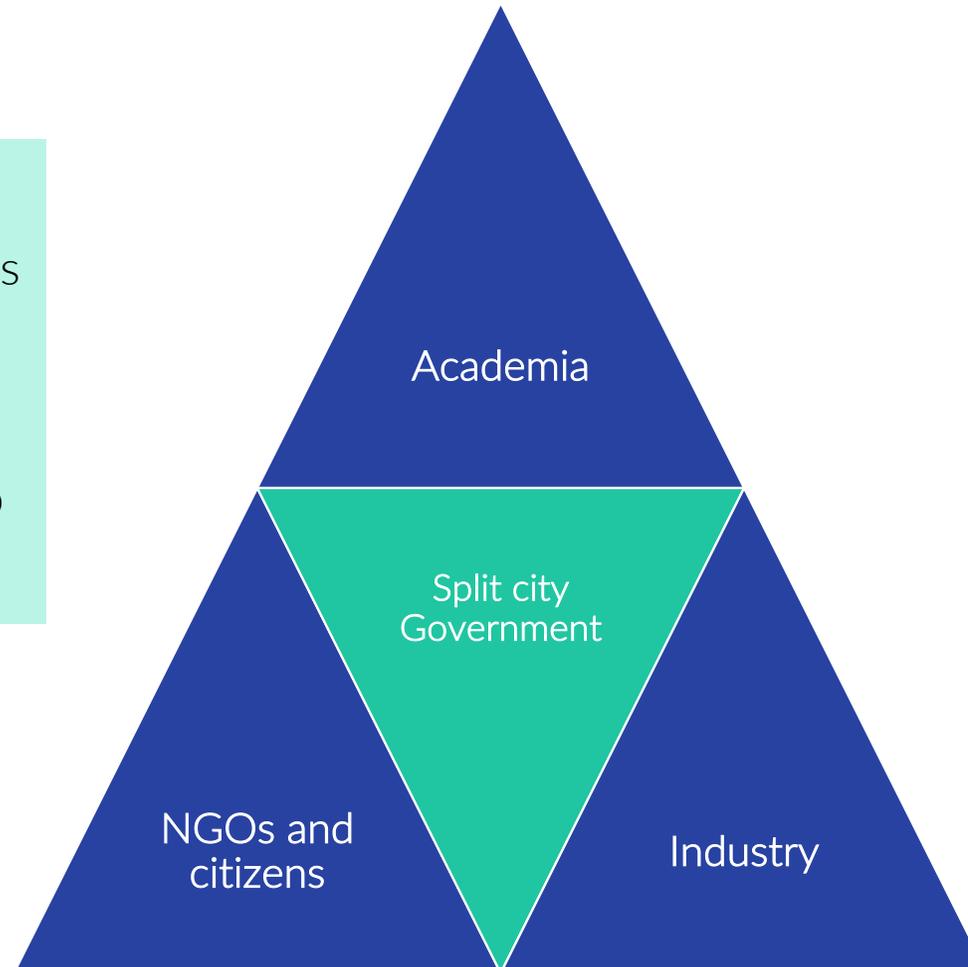
City's ecosystem insights

Within local eco-system there is a high range of stakeholders involved in Smart City solutions than can be summarized as;

- Various companies and manufacturers that base their business on smart technologies and production,
- University of Split, second largest in Croatia with world recognized and cited scientists and researchers, that have a lot of Smart City projects ready for implementation in economy sector
- Government that supports digital transition and digitalization of public services
- Civil sector that serves as mediator between the national and local government and various public groups The civil sector's role is to inform the City of Split of the needs of their target groups
- Citizens that are end users of all services and Smart city solutions that the City of Split will develop and promote
- Above described stakeholder already work together on developing various Smart City solutions while the role of the City's Mayor and City Council is to champion and support the initiative

Executive summary of city ecosystem

There is a history of collaboration among the city stakeholders. However, complex programs such as these require more intense engagement with the various segments of society, in order for the objectives to be achieved. The city's stakeholder map outlines key local enablers and the actions to inspire and engage them.



ICC vision for the city of Split



Executive summary of city Solutions and delivery strategy

Within ICC framework, the City of Split emphasized the following solutions:

Solution 1. Digital services platform

Solution 2. Increasing the use of solar energy by upgrading GIS infrastructure

Digital services platform will help develop a digitalized and horizontally integrated public administration system that will improve the connectivity, effectiveness and will create easy access for citizens.

Increasing the use of solar energy in the city by using GIS infrastructure will be achieved through mapping the rooftops' solar potential and deploying the Pilot building to serve as an example. Creating the Solar map City of Split will provide clear insights of the rooftop potential for the entire city, by providing data on the number of suitable rooftops, depending on their size, shading, direction, and location, and the Pilot building aims to provide a Launchpad to test and demonstrate the integration of new technologies that would enable high penetration of renewables and accelerate the low-carbon transition.

The digitalized models using the GIS infrastructure could be made available to citizens and businesses for creating new opportunities. A clear roadmap and resources will be defined and the City will strive to make the most effective way to achieve these solutions and their ambitions

Section

2

City of Split: Ambition and roadmap

ICC Transformation

February 2021 to May 2022

Rationale to roadmap

Planning

- The implementation roadmap was created on a high-level basis, i.e. it was determined by approximating typical time requirement to develop such solutions (did not consider the risk of potential delays due to local government changes, pandemic, etc.)
- The main idea was to develop and set-up infrastructure elements which would support the services offered through the platform.
- The longest expected time requirement was envisaged for the consolidation of the city-level citizen/business data into chosen Solutions

Critical paths

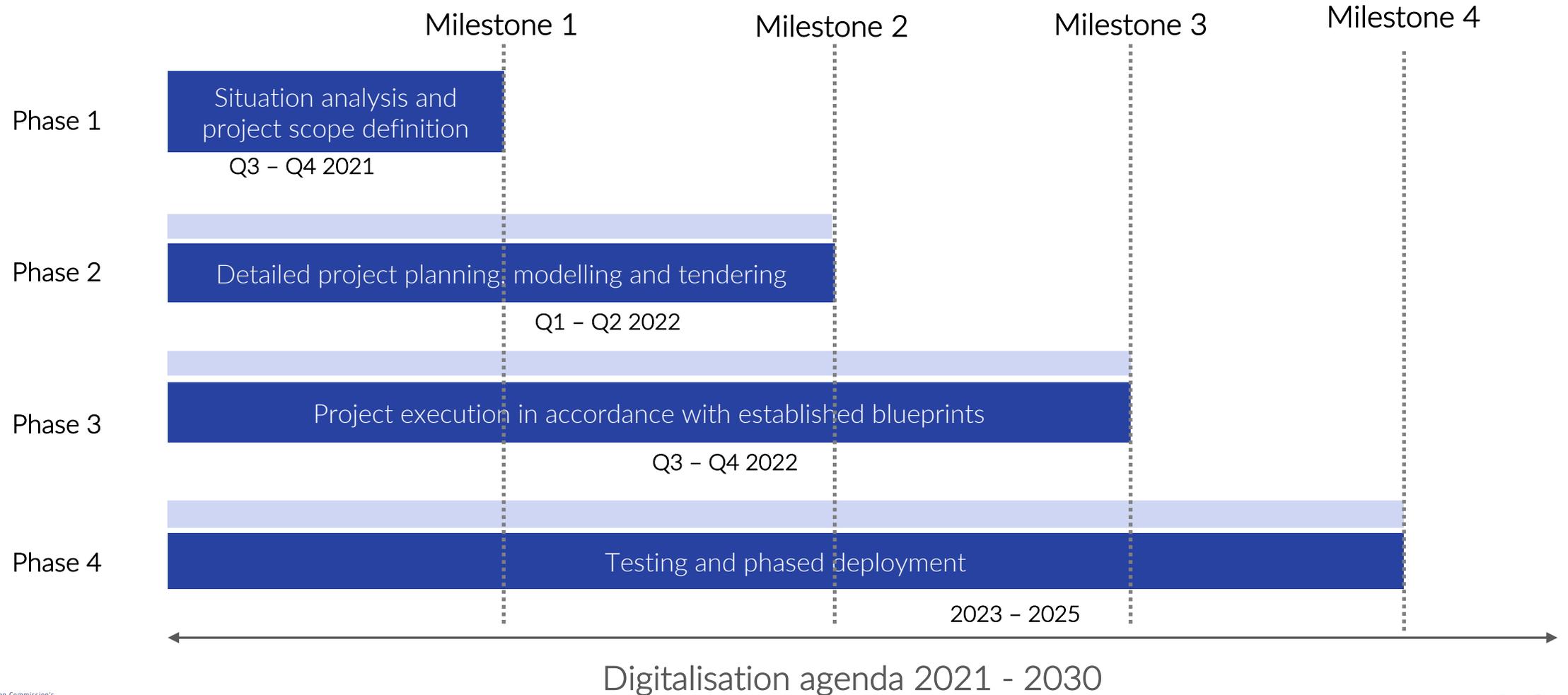
- Even though each solution could be treated independently, there are inter-dependencies between solutions which eventually present steps in reaching City of Split digital and green transition

Priorities

- Considering the City still does not have adequate insight into its internal processes as well and well developed GIS infrastructure, a priority for the City is to analyze its business processes and then implement solutions needed for its road to digital and green transition.

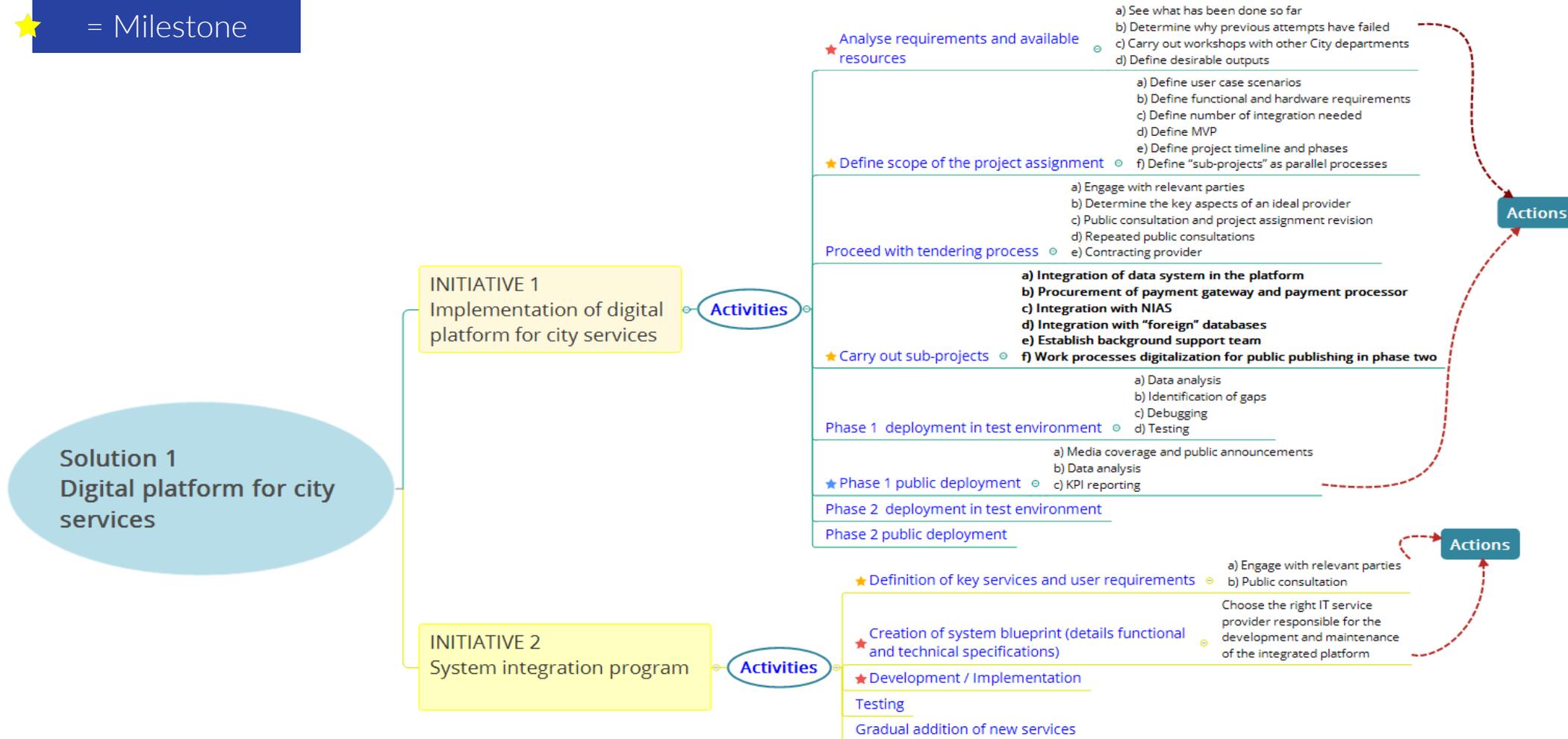
High level implementation roadmap for solution 1.

1 Digital services platform



High level implementation roadmap for Solution 1. Digital services platform

★ = Milestone



1

Initiative charter

Digital services platform

Strategy

Description City of Split Digital services platform has corresponding initiatives: Implementation of digital platform for city services and System integration initiative.

Why: to make public service more efficient, better management of human resources and competences, easier communication between people and services

How: Implementation of a single platform for digitalized services for citizens, Cross-integration of digital tools and services, master data management, one stop shop for citizens and businesses

Link to vision

Implementation of digital platform for city services and System integration initiative creates sustainable solutions for the benefit of its citizens

Link to ambition statement

Develop a digitalized and horizontally integrated public administration system that provides better service for citizens

Expected impact and timing

3+ years, more efficient and transparent public administration and more efficient public service delivery to support citizens and businesses

Stakeholders involved

Solution lead Department for Smart City and IT

Solution working team Departments for Smart city and IT, Finance department and Mayors office

Contributors All thematically involved City Departments, City owned communal companies (Čistoća, Split parking, Promet, Lovrinac, Vodovod), service providers and consultants

Risks and mitigation Key risks are Insufficient human resources and lack of competences; organizational bottlenecks; inefficient prioritization; slower than planned internal digitalization and automation of city services, lack of central repository of citizens and city services.

Mitigation measures planned are increasing City's internal IT capacity, increasing capacities of the city owned companies, extensive communication during the implementation period, education of all stakeholders.

Inputs, outputs, outcomes and impacts

Source of funding and estimated cost 2.500.000,00 €
City budget, EU funds, tenders and grants as other innovative financing models

Solution maturity outputs City of Split has initiated this innovative solution and is progressing gradually by including city-owned companies one by one, at the same time solving technical problems occurring due to different IT systems used by stakeholders. Due to firm support from the Mayor this solution will continue to be developed including larger number of companies as well as increasing competencies of all stakeholders involved.

City performance outcomes and impacts Work performance reporting platform; Remote work enabled; Percentage of users and financial transactions through the platform to increase gradually; Number of remote tools and data access

1

Initiative charter

Digital services platform

	Implementation of digital platform for city services	System integration initiative
Link to vision	Implementation of digital platform for city services creates sustainable solutions for the benefit of its citizens	System integration initiative creates sustainable solutions for the benefit of its citizens
Link to ambition statement	Develop a digitalized and horizontally integrated public administration system that provides better service for citizens	Develop a digitalized and horizontally integrated public administration system that provides better service for citizens
Description	Creating easy access to public administration via Digital services platform	System integration will improve the connectivity and effectiveness of the Digital services platform
Estimated costs and source of funding	500.000,00 €, City budget, EU funds,	2.000.000,00 € City budget, EU funds, tenders and grants as other innovative financing models
Initiative lead	Department for Smart City and IT	Department for Smart City and IT
Initiative working team (core team)	Department for Smart City and IT, Split City ICC team	Department for Smart City and IT Split City ICC team
Contributors (stakeholders contributing)	Department for SmartCity and IT, City Finance Department City communal companies; Čistoća (Waste management), Split parking, Promet (public transportation), Lovrinac (city cemetery management), Vodovod (water supply), External consultants	Department for SmartCity and IT, City Finance Department City communal companies ; Čistoća (Waste management), Split parking, Promet (public transportation), Lovrinac (city cemetery management), Vodovod (water supply), External consultants
Ultimate goal and scope of the initiative	Implementation of a single platform for digitalized services for citizens, starting from utilities and followed by other city services in next phases	Cross-integration of digital tools and services, master data management, one stop shop for citizens and businesses
Major milestones	<ul style="list-style-type: none"> Detailed project planning Initial system design Definition of key services and user requirements System blueprint (details functional and technical specifications) Development / Implementation Testing 	<ul style="list-style-type: none"> Definition of key services and user requirements System blueprint (details functional and technical specifications) Development / Implementation Testing Gradual addition of new services

1

Initiative charter

Digital services platform

	Implementation of digital platform for city services	System integration initiative
Dependencies with other city projects	Establish Payment gateway and payment processor procurement within Finance department; Central repository establishment within IT department; Annex of existing data exchange agreement with Ministry of Internal affairs; Open API for data exchange between city owned companies; Media public relations	Digital signature introduction for all stakeholders; Organizational changes; Human resources;
Key stakeholders	<ul style="list-style-type: none"> • City of Split • Communal service representatives • Platform vendor/service provider • Citizens 	<ul style="list-style-type: none"> • City of Split • External experts • Various industry experts
Impact and timing	3 years, more efficient public service delivery to support citizen and businesses	3+ years, more efficient and transparent public administration
Risks	<ul style="list-style-type: none"> • Insufficient human resources and competences • Internal digitalization and automation of city services and exposure on APIs, as prerequisite • Lack of central repository of citizens and city services 	<ul style="list-style-type: none"> • Insufficient human resources and lack of competences; • Organizational bottlenecks; False prioritization;
Mitigation measures	<ul style="list-style-type: none"> • Increasing City's internal IT capacity, increasing capacities of the city owned companies, extensive communication during the implementation period, education of all stakeholders. 	<ul style="list-style-type: none"> • Increasing City's internal IT capacity, increasing capacities of the city owned companies, revision of the organizational chart, extensive communication during the implementation period,
Support needed	<ul style="list-style-type: none"> • Mayor's continued support, citizens acceptance of a solution • Collaboration of ICC Project team with city IT department, mainly in implementation of the central repository and exposure of API services • IT departments of communal service providers in integration with the platform 	<ul style="list-style-type: none"> • Choosing the right IT service provider responsible for the development and maintenance of the integrated platform • Defining data, governance and ownership model • Financing the digitalization of the City

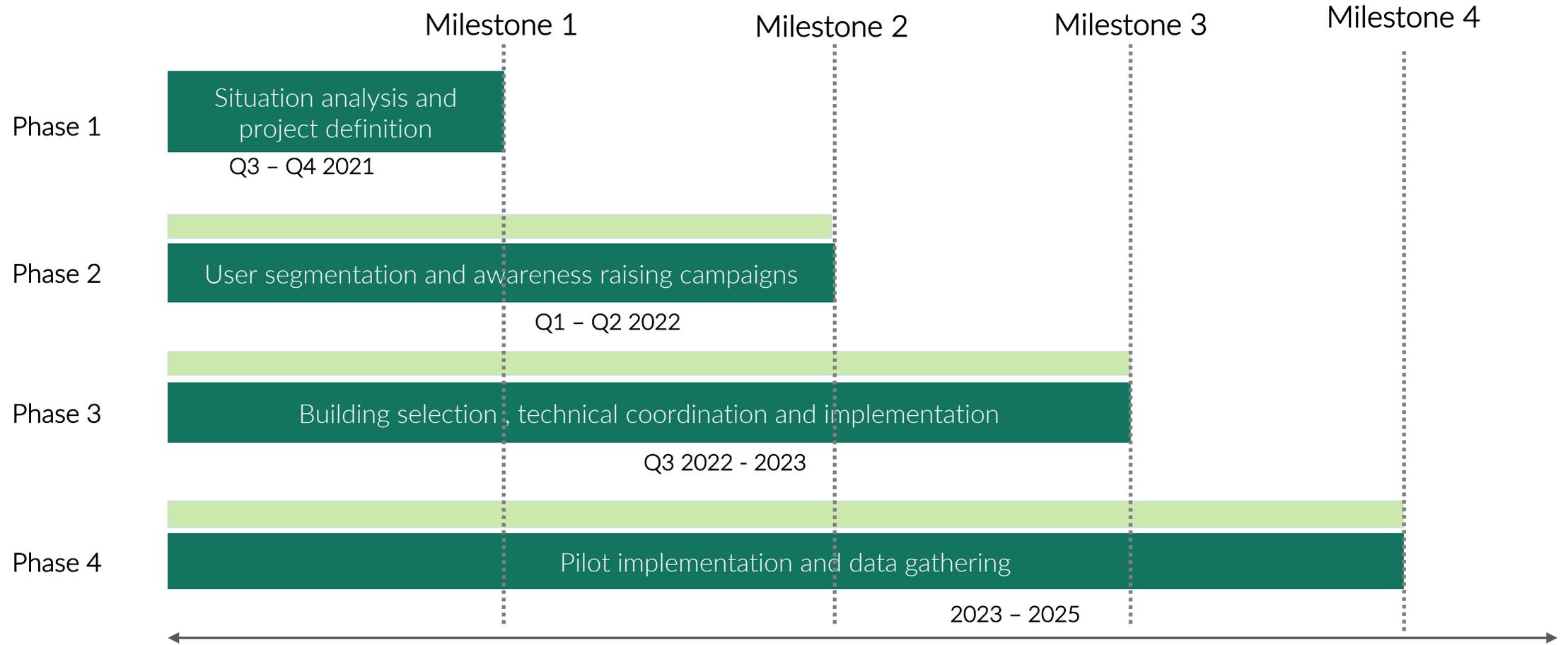
Key Performance indicators

Solution 1. Digital services platform

Solution	Initiative	Activities – Inputs and actions	Solution Maturity - outputs	Targets	City performance – outcomes	Solution Impacts	Link to SDGs
1. Digital services platform	Implementation of digital platform for city services	<ul style="list-style-type: none"> • Creation of a public application interface (web, mobile platforms) • Training of employees of the Smart City Platform team for background support • Implementation of a payment functionality • Survey for users satisfaction with the Platform • Regular monthly coordination workshop with all stakeholders 	<ul style="list-style-type: none"> • Number of users and financial transactions through the new platform • Rate of user satisfaction • Adoption rate of the solution 	<ul style="list-style-type: none"> • Reach at least 1000 users by the end of 2023 • 6 different application forms offered through the platform 	<ul style="list-style-type: none"> • Employee satisfaction • Acceptance / regular use of the Platform • Collaboration among city departments or between the city and other stakeholders within the project scope increased 	<ul style="list-style-type: none"> • Digital transformation of City's services • Inter-department collaboration between City departments improved • Unification of all digital city services • Efficient communication with citizens • Citizens' satisfaction with public services increased 	SDGs No. 8 & 11
	System integration initiative	<ul style="list-style-type: none"> • In-depth situational analysis • Digital signature introduction for all city's departments; Organizational changes; Increased human resources • Education to increase IT capacities • Weekly engagement with relevant parties 	<ul style="list-style-type: none"> • Number of City's employees trained • Rate of work process optimization • Number of fully digitalized processes • Number of paperless services adopted • Number of remote tools and data access 	<ul style="list-style-type: none"> • 10 fully digitalized services by 2025 	<ul style="list-style-type: none"> • Work performance increased • Workflow personalized • Remote work enabled • Number of remote tools and data access 		

High level implementation roadmap for solution:

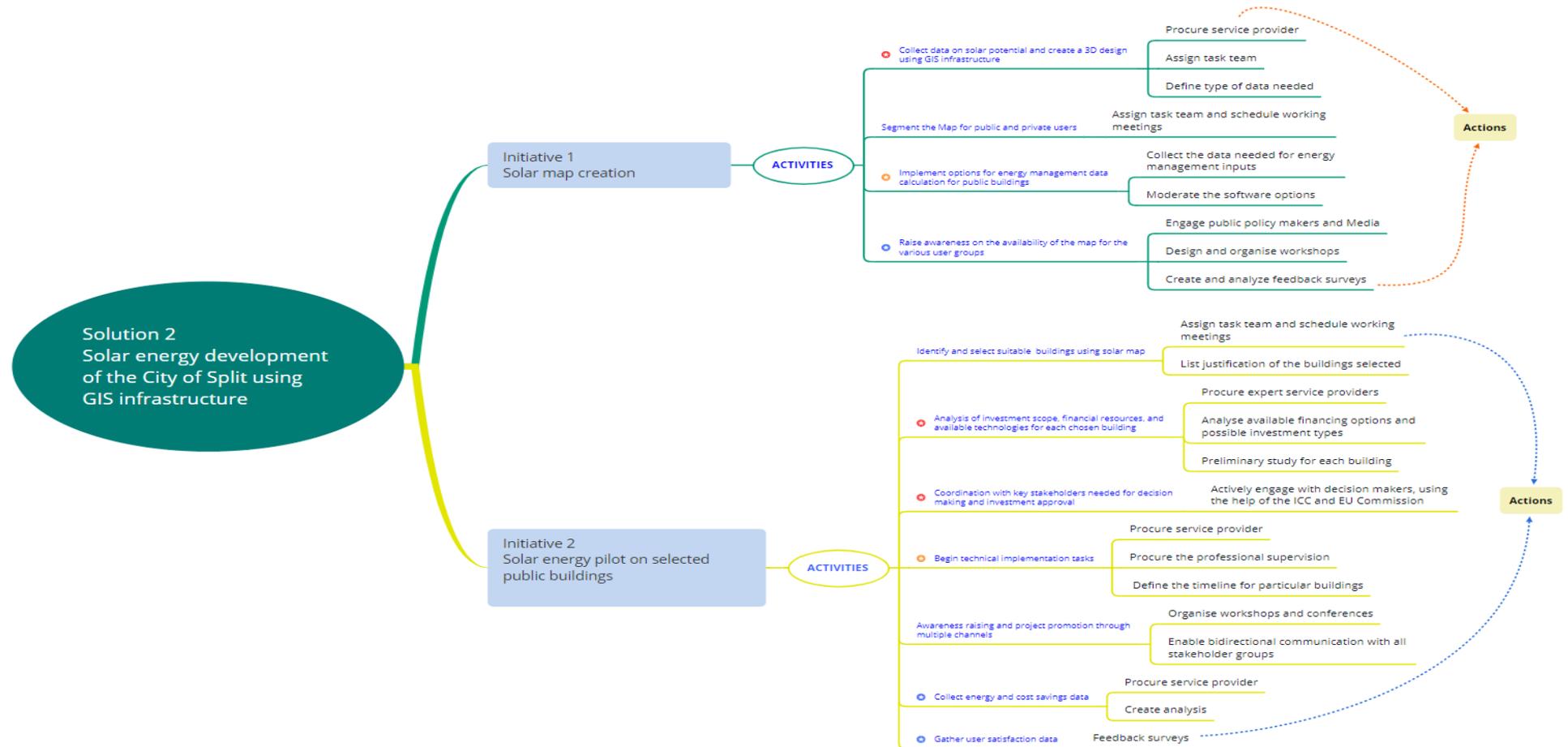
2 Increasing the use of solar energy by upgrading GIS infrastructure



Low-carbon development agenda 2021 - 2030

High level implementation roadmap for Solution 2. Increasing the use of solar energy by upgrading GIS infrastructure

★ = Milestone



2 Initiative charter

Increasing the use of solar energy by upgrading GIS infrastructure

Strategy

Description Increasing the use of solar energy within city of Split will be based on the City's GIS infrastructure. The initial stage will be through the creation of a Solar map, followed by a Solar energy pilot on selected public building/s

Why: to make full usage of the city of Split great solar potential, to make a first step towards energy independence and to shift local economy from excessive dependence on tourism

How: To facilitate planning of solar installation on buildings; test available technologies for solar energy use and to use the lessons learned from the pilot project in the rollout and planning of wider city activities. This would serve as a first local use case for determining future investments in renewables e.g. solar capacities

Link to vision Mapping the rooftop solar potential of the city brings us one step closer to the goal of being a green city that implements sustainable solutions and the Pilot aims to test and demonstrate the integration of new technologies that would enable high penetration of renewables and accelerate the low-carbon transition

Link to ambition statement Development of innovative technological solutions that would strengthen the knowledge pool as well as the local business landscape and encourage citizen participation in planning in digital economy

Expected impact and timing 2 years for mapping and 3 years for implementation of Pilot cases. Better decision making can be placed in terms of using the solar potential defined in the Map, meeting the green goals of CO2 reduction, reduction of energy costs for users.

Stakeholders involved

Solution lead: Smart City Department

Solution working team: Departments for Smart city, IT, construction and planning and Mayors office

Contributors: Citizens, Institutional users, SME's, Electric Power Utility, FZOE, ESCOs, National energy management institutions, external experts, relevant Ministries

Risks and mitigation Lack of engagement of key stakeholders, technological risks, project scope expansion, lack of investment and sufficient funding.
Mitigation measures; Support from the mayor and City Council, Raise awareness through workshops, focus groups, social media, education of wider community through media channels, research possible financing resources.

Inputs, outputs, outcomes and impacts

Source of funding and estimated cost 233.000,00 €
City budget, tenders and grants from The Environmental Protection and Energy Efficiency Fund, ESI funds for Croatia as well as other financing models such as financial instruments.

Solution maturity outputs City of Split has a great energy transition potential towards renewable energy resources and the usage of natural inputs for greener industry but the process of using of solar energy by public and private owners has just started, so the maturity is in its infancy but will slowly increase in particular in the time of energy crisis.

City performance outcomes and impacts Frequency of engagement with stakeholders
Percentage of energy saved by the Pilot
Number of new users of the Solar Map

Initiative charter

2 Increasing the use of solar energy by upgrading GIS infrastructure

	Solar map creation	Solar energy pilot on selected public buildings
Link to vision	Mapping the rooftop solar potential of the city brings us one step closer to the goal of being a green city that implements sustainable solutions.	The Pilot aims to provide a launchpad to test and demonstrate the integration of new technologies that would enable high penetration of renewables and accelerate the low-carbon transition
Link to ambition statement	This process of transition to the most readily available renewable resource in the city, would help with the development of innovative technological solutions that would strengthen the knowledge pool as well as the local business landscape.	Testing on selected public buildings will help encourage citizen participation in planning in digital economy
Description	The solar map will provide clear insights of the rooftop potential for the entire city, by providing data on the number of suitable rooftops, depending on their size, shading, direction, and location. The digitalised models using the GIS infrastructure could be made available to citizens and businesses for creating new opportunities	After determining the rooftop potential for individual rooftops i.e. amount of solar panels that could be installed based on its size, shading, tilt, location, and construction, a 3D model will be made, followed by the pilot activity on selected public buildings will using GIS infrastructure
Estimated costs and source of funding	33.000,00 € / City budget	200.000,00 € City budget, tenders and grants form Energy fund as well as other innovative financing models
Initiative lead	Department for Smart City and IT	Department for Smart City and IT
Initiative working team (core team)	Split City ICC team	Split City ICC team
Contributors (stakeholders contributing)	Croatian Electricity Company - HEP Group, National energy management institutions	Croatian Electricity Company - HEP Group, National energy management institutions, external experts, relevant Ministries, The Environmental Protection and Energy Efficiency Fund

2

Initiative charter

Increasing the use of solar energy by upgrading GIS infrastructure

	Solar map creation	Solar energy pilot on selected public buildings
Ultimate goal and scope of the initiative	To empower citizens to plan and implement energy efficiency of their own buildings; speeding up the usage of renewable energy sources especially solar power in public buildings.	<ol style="list-style-type: none"> 1. The goal is to test available technologies for heating and electrical energy use and to use the lessons learned from the pilot in the rollout of wider city planning activities on green energy initiatives 2. To serve as a first local use case for determining future investments in renewables e.g. solar capacities
Major milestones	<ol style="list-style-type: none"> 1. Completed solar map 2. Actual number of potential rooftops for solar panels 3. 3D model of public buildings 4. Data showing the interest of citizens and business owners 	<ol style="list-style-type: none"> 1. Selection of buildings 2. Agreements with Croatian Electricity Company, HEP Group 3. Selection and procurement of Technology 4. Installation of panels 5. Data from twelve months of continuous use
Dependencies with other city projects	Activities from the adopted strategic documents	Local green transition initiatives
Key stakeholders	Citizens, Institutional users, SMEs, Croatian Electricity Company - HEP Group	Citizens, Institutional users, SMEs, Croatian Electricity Company - HEP Group, The Environmental Protection and Energy Efficiency Fund, ESCOs
Impact and timing	2 years for mapping, better decision making can be placed in terms of using the solar potential defined in the Map	3 years for implementation of Pilot cases. Proven business case for improved energy efficiency in the city, meeting the green goals of CO2 reduction, reduction of energy costs for users.
Risks	Lack of engagement of key stakeholders	Lack of engagement of key stakeholders, technological risks, project scope expansion, lack of investment and sufficient funding.
Mitigation measures	Raise awareness through workshops, focus groups, social media, education of wider community through various media channels	Raising awareness, researching new tech. solutions, researching available investments resources
Support needed	Mayor's continued support and high level political engagement, media support, citizens acceptance of the solution	Mayor's continued support and high level political engagement, media support, citizens acceptance of the solution

Key Performance indicators

Solution 2. Increasing the use of solar energy by upgrading GIS infrastructure

Solution	Initiative	Activities – Inputs and actions	Solution Maturity - outputs	Targets	City performance – outcomes	Solution Impact	Link to SDGs
2. Increasing the use of solar energy by using GIS infrastructure	Solar map	<ul style="list-style-type: none"> Number of public buildings identified for the implementation of solar panels Workshops and citizens outreach activities carried out Frequency of media coverage 	<ul style="list-style-type: none"> Number of smart meters installed Number of public buildings included Number of citizens / companies using the Solar map for investment profitability analysis Adoption rate of the new technology 	<ul style="list-style-type: none"> 1 workshop per month 200 public buildings included 	<ul style="list-style-type: none"> Number of workshops and citizens outreach activities carried out, Level of interest of citizens and business owners increase Number of new users of the Solar Map increased 	<ul style="list-style-type: none"> Enable citizens, the private sector and the City to efficiently and simply plan and analyze the profitability of the investments in solar power plants Enable further steps for the purpose of upgrading the technical solutions, Energy costs savings Reducing the city's carbon footprint 	SDGs no. 3, 7, 11 & 13
	Pilot activity on selected public buildings	<ul style="list-style-type: none"> Selection of ideal rooftop surfaces (at least 3) Selection of viable financial model Monthly engagement with stakeholders 	<ul style="list-style-type: none"> Choice of ideal rooftop surface Choice of financial model 	<ul style="list-style-type: none"> Number of installed solar panels Percentage of energy saved by the Pilot Percentage of the decarbonisation achieved Adoption of renewable energy technology and percentage of RES using 			

Key Performance indicators - Summary

Solution	Activities – Inputs and actions	Solution Maturity - outputs	City performance – outcomes and impacts
1. Solarization of the City of Split using GIS infrastructure	Number of buildings identified for the implementation of solar panels;	Number of smart meters installed	Frequency of engagement with stakeholders
	Number of workshops and citizens outreach activities carried out	Number of installed solar panels	Percentage of the decarbonisation achieved
	Frequency of media coverage	Adoption rate of the new technology	Number of new users of the Solar Map
2. Digital services platform	Survey for users satisfaction with the Platform	<ul style="list-style-type: none"> • Number of users and number of financial transactions through the new platform • Rate of user satisfaction with city services 	Percentage of users and financial transactions through the platform
	In-depth situational analysis	<ul style="list-style-type: none"> • Rate of work process optimization • Number of fully digitalized processes • Workflow personalization 	<ul style="list-style-type: none"> • Work performance reporting platform; Remote work enabled • Number of remote tools and data access

Key Performance indicators - Cross cutting indicators

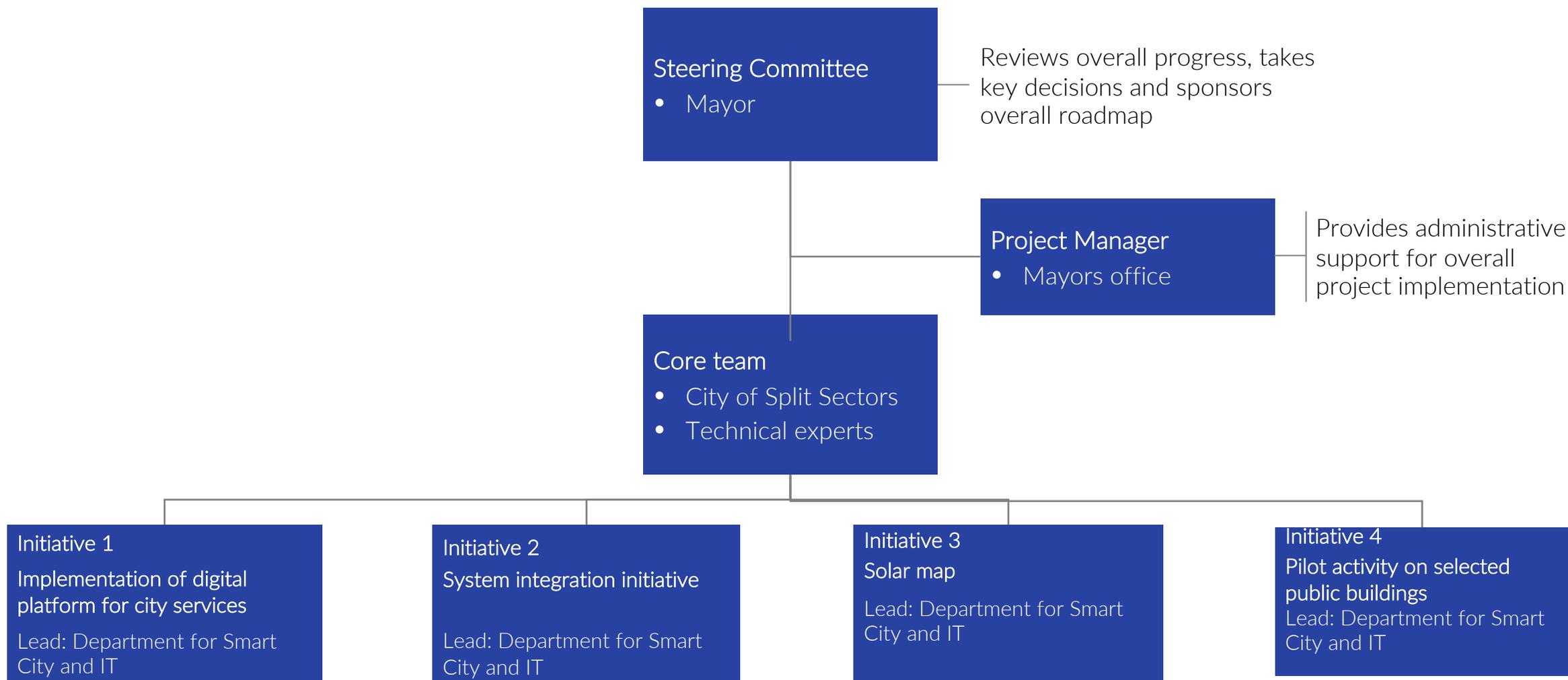
Cross cutting indicators for Solution 1. & 2.

Number of citizens and new businesses using Solutions' services per year

Level of citizens awareness of renewable energy and digital & green transition

Number of new financing solutions adopted

4 Governance structure for roadmap implementation for both solutions



The European Commission's
**INTELLIGENT CITIES
CHALLENGE**

Section

3+4

City of Split: Impact

ICC Transformation

February 2021 to May 2022

Assessment of city progress



What has worked well during this cycle? What is the impact you are proud of?

- City was successful in introducing the ICC initiative to a new mayor and administration. Gained high political support.
- Defined contract with external experts to produce Solar map and Smart City Application
- Application of 16 public buildings to install solar rooftop solutions on EEA grants



What are the main lessons you learnt?

- The main lesson learnt is that technical solutions can never be applied identically on all the defined users
- Communication between stakeholders must always go bottom-up
- Deploying Smart City Platform with all digital processes will always go wrong if standards are not communicated and planned top-bottom from the start



What will you focus on in the next cycle?

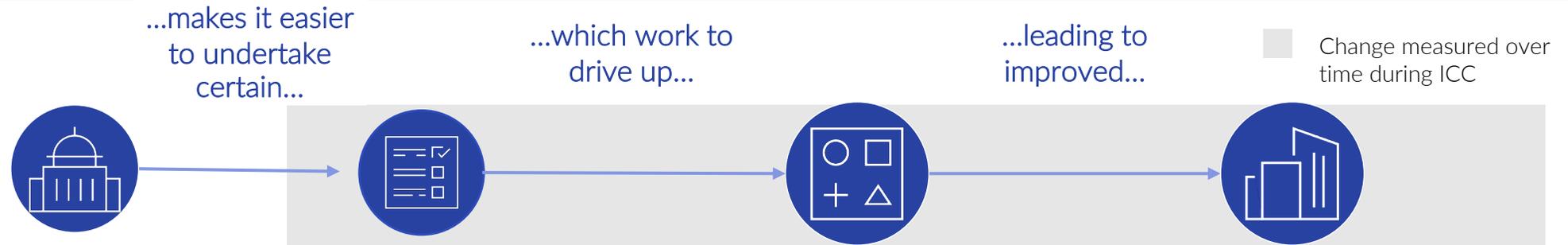
- Continuous work with external experts to deploy all digital content of the Smart City Platform and Solar Map with high technical standards
- Communicate with citizens about their needs within these solutions, and try to integrate them in future operational offer



What are they key areas you would be keen to learn from the experience of other cities?

- Integration of all digital services offered to citizens into a single smart city hub, including performance of individual smart city service providers that do not meet the standards
- Challenges of implementation of solar map solutions in practice, as well as the possibilities of integrating the business sector into the Solar map

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	<p>Each city has unique strengths and weaknesses that help action happen. These can be stakeholder networks, local capabilities, cultural factors or many more that drive success in ICC projects.</p>	<p>A cities main intervention on the ICC is to take actions. These can be direct (e.g., procuring technology), or indirect, (e.g., forming a working group on a topic). The right actions can lead to the right inputs going in to the ICC (e.g., funding, time)</p>	<p>Cities can drive technological solutions to try and improve city performance. How well these solutions are currently used can be described as their 'maturity', - considering whether they are available for stakeholder use, what stakeholders think of them, and so on</p>	<p>Success of an intelligent city is ultimately measured by its ability to address city needs. These can be considered an improved quality of citizen life and a better environment for stakeholders</p>
Example	<p>A history of strong collaboration between city and a local university...</p>	<p>...allows the creation of a new e-health pilot project using social housing in the city...</p>	<p>...leads to the launch a new tele-health solution utilising 4G data connections...</p>	<p>...resulting in pre-emptive diagnosis and lower wait times at medical facilities</p>

Appendix

City of Split: Additional information

ICC Transformation

February 2021 to May 2021

Solution no. 2

Solution name: Increasing the use of solar energy by upgrading GIS infrastructure

Link to the vision

What is your solution solving for

This solution will help in developing the green city for the benefit of citizens

Description

What are the key features of your solution?

3D mapping of City of Split will enable the insight in the buildings with solar potential, upgrade in segment of financial mechanisms for solar solutions and energy consumption management.

Benefits

How does your solution create value?

Created value with a smart solution that will bring Split a little closer to Green Deal accomplishments

Scaling

In what ways could you make the solution rapidly scale? E.g., capabilities, funding, etc.

Official confirmation by the City's Council

Develop projects' documentation and proposals for securing funding from ESI funds

Bonus zone

Any visualisation you'd throw in to bring your solution to life



Next steps

What key questions would you want to answer before pursuing this further?

Will this solution interconnect the existing issues of lack in knowledge for financial options and technological solutions.

Local enabler ecosystem mapping: Solution 2. Increasing the use of solar energy by upgrading GIS infrastructure

Local enablers of relevance

Mapping of solar potential in city of Split will include technical stakeholders to screen the city and create the map that should serve as a technical solution based on 3D attributes of buildings. Financial mechanisms and energy management mechanisms should also be incorporated in this solution. Financial mechanisms should be derived from international, national and regional funds available. Energy management of all the buildings in the map of solar potential, as an activity will be coordinated with big national company HEP and relevant Ministries and PA's. National coordination and management of public owned buildings already exists, so here could rise the opportunity to develop energy management system for all the relevant buildings in the Mapp of solar potential in Split.

Solution maturity

There is already developed GIS in Split, but a lot of upgrading is needed. City of Split will undertake the activity of 3D mapping of the whole city in 2021, regardless of ICC. There exists a high local demand to emphasize the importance of local solar potential in driving the change to solar energy transition. Within ICC, City of Split, as a local government, can enable the digital process of decision making of every citizen how to implement solar solution and in which energy efficient measure to invest.

Wider thoughts and reflections on appeal of solution

This solution will be the first step of City of Split to digitalize the process of decision making in the city of Split's path to solar transition and this solution will be fully free for use, since it is publically financed. It could be replicable to other Cities, Regions or Communities that are yet waiting to engage in such a way.

SOLUTION STRATEGY: Increasing the use of solar energy by upgrading GIS infrastructure

What does the solution set out to solve?

This solution is an Initiative to make Mapping of solar potential in Split a politically relevant solution that could attract additional financial resources in the future. The city of Split has the greatest potential in solar energy within all the renewable energy resources. This huge potential should be capitalized and City of Split should have the vision of becoming an energy self-sufficient city. Mapping of solar potentials in Split is the first step and capital initiative that can attract additional projects and funding. The cooperation of numerous actors and stakeholders like Ministries and national agencies dealing with energy transition and energy management is needed. It is necessary to include all sources of financing for the installation and management of solar panels, whether they are international, national and locally funds. It is necessary to include technical energy companies that would use this solution for the assessment of energy investments. Every citizen in Split would receive a record of their residential building roof potential for the installation of solar panels. The national advantage of such approach to localize the potential of renewable energy resources, can improve full usability of these resources and help creating future funding documentation and correct direction and distribution of financial sources. The purpose of mapping the solar potential in city of Split is to promote the spread of solar cells in City of Split and wider, as well as to highlight the large resource that energy from the sun can contribute in city of Split, and as well to energy transition and accomplishing the EU goals of decarbonization by 2050.

Furthermore, solar maps can be updated on a regular basis and thus used for monitoring effects of policy application. Energy production and replacement of fossil fuels by renewable sources, along with energy savings on the demanding side, constitute the basis for sustainable energy policies that are concerned with reducing dependence on those fuels, thus gaining in environmental benefits. Such policies can include new legislation and incentives to investment. Knowing the installed capacity for solar energy generation, as well as the geographical distribution and characteristics of the best places for implementing solar systems, can lead to effective expansion of distributed generation of renewable energy in the city.

SOLUTION STRATEGY: Increasing the use of solar energy by upgrading GIS infrastructure

Why is this the right solution for the city?

The solar resource is arguably the best source of energy to consider when considering energy production in the future in Dalmatia region. In the context of increasing energy consumption, solar energy appears not only as a renewable and emission-free alternative, but also as a solution capable of playing a relevant role in the future of the energy supply chain. Especially when it comes to the supply of energy to large cities, where there is a larger part of consumption. Consequently, the interest in the knowledge of the solar potential in the urban environment and the demand for solar energy applications that take advantage of it have also grown, causing more and more buildings to become energy production points, gradually leading to decentralization of production and greater autonomy of local production to the supply network.

Local governments are responsible for applying, in their cities, strategic guidelines to improve energy efficiency based on renewable sources. Geographic-based approaches are necessary to determine the most suitable locations, to estimate revenues and expenses. In this context, remote sensing technologies can be an effective source of updated geo-information about the urban environment. Through the generation of energy demand and supply scenarios for the city, urban planners and city officials can obtain accurate assessments and decide upon realistic sustainable goals. Solar energy is one of the best renewable energy sources, especially for Split, due to its solar potential of 300 sunny days per year and comparative advantage in electricity production on a national level. Assessing the city's solar energy potential through solar mapping, constitutes a valuable analytical tool that permits quantifying local capabilities for energy production and finally use those findings for designing and implementing urban planning energy strategies, in line with sustainable development goals and decarbonization aims of EU.

SOLUTION STRATEGY: Increasing the use of solar energy by upgrading GIS infrastructure

What are the main features of the solution?

This solution will be a web map and a tool for stakeholders who are considering installing solar cells on their resident buildings. Each user will be able to see which of the surfaces are best suited for solar cells. By clicking on the building you want to install solar cells on, you get everything you need to know about your options. The variables that will be included in this solution are, solar potential of buildings, energy consumption and savings in residential buildings, financial mechanisms that can support solar transition, energy management processes, defining urban blocks which are emission free or have reduced-emission of CO₂, promoting urban design optimized for sun exposure, sharing best practices and list of available solar technologies.

Promoting the use of solar energy in urban environments requires knowing the geographical distribution and characteristics of the best places to implement solar systems. In this context, buildings can be used to locally generate electricity. Based on remote sensing data, the city's surface can be modeled and the solar income at each location can be estimated.

With drone flight a 3D mapping of Split will create Digital Surface Model (DSM) of the area and a Digital Terrain Model (DTM) from a set of elevation mass points and contours available in municipal cartography. This file stores the height of all elements above the terrain. Applying these data in the layer with the annual solar radiation available for each building, will generate the estimated map with the energy produced by PV panels.

The solution will be created using Geographic Information Systems (GIS) based solar models, Light Detection and Ranging (LiDAR) data and PVGIS (EU's solar mapping program). Spatial database including planimetric and altimetric data will be used. The planimetric information (building footprints, land use map etc.) will be derived from Municipal Cartography, LiDAR and Urban Atlas. The altimetric data will be derived from two sources: a LiDAR point cloud, and digital cartography. PVGIS consists of two databases, one based on measurements from weather stations around Europe (PVGIS Classic), and one based on satellite measurements (PVGIS CMSAF). The total PV potential will be assessed and compared with the local electricity demand. The results will constitute an initial assessment of the city's solar potential that can be used to support management decisions regarding investments in solar systems.

SOLUTION STRATEGY: Increasing the use of solar energy by upgrading GIS infrastructure

What are the main features of the solution?

Based on the buildings angle and direction, we will mark with colour all buildings in city of Split based on how much solar energy the relevant surface can capture from the sun on an annual basis. This will generate the picture of the surfaces best suited for photovoltaic systems installation.

The residential sector plays an important role in cities' electricity consumption. In city of Split, 40% of total electricity consumption goes on consumption on residential sector. Rooftops solar potential and electricity demand considering the local average electricity demand per capita, which for the Croatian average is 3800 kWh/person/year, and the population distribution, the electricity demand of residential buildings can be estimated. By direct comparison with the PV potential, the fraction of the electricity demand that can be satisfied by PV systems can be determined.

Analysis regarding the relationship between the solar fraction of the electricity demand and the type of buildings highlights the distribution of buildings with higher and lower PV potential in the area. Buildings with similar volumes but different heights could have different typologies. Hence, installing panels on the roofs of the buildings with less than three-stores potentially generate more solar electricity than they consume, while taller buildings have less roof area for the installation of solar electricity, and therefore will have larger volumes hence are assumed to have more residents and therefore higher electricity demand.

As a rule, the installation of a solar system in a building is preferably done on the roofs, as they represent areas with greater sun exposure, in addition to being, at the outset, the least occupied areas of the built envelope and thus allowing greater freedom of inclination and guidelines for photovoltaic modules or thermal collectors. The façades of buildings, typically vertical, at first glance do not seem to be good places, since, since the sun is mostly above the horizon, a solar panel installed on a facade is expected to produce less per unit area. However, given that in modern urban agglomerations the area of façades is much higher than that of roofs, these end up representing a relevant fraction of the solar potential in a city by combining all its small contributions. The evaluation of the solar potential on the façades is of great interest in the field of photovoltaic energy, primarily due to the cost factor of the modules themselves. Initially, photovoltaic modules were very expensive, making it impossible to place them in a building in a situation other than optimal.

SOLUTION STRATEGY: Increasing the use of solar energy by upgrading GIS infrastructure

What are the main features of the solution?

That is, if there are few resources for investment, any panels will preferably be placed on the roofs. However, in the last decade, prices have fallen 10 times over the initial price, making it increasingly accessible to install panels, not only in the best places in the building but also in the rest of the available area, and therefore, on the facades. On the other hand, facades represent the bulk of a building's area and acquire importance as a lot of solar energy begins to be integrated into the electrical network, so another advantage of taking advantage of the potential of facades is that the different orientations of facades in a city allow production at different times of the day (ie a façade to the south, in the northern hemisphere, produces more at noon, another one facing east produces more in the morning and the one facing west produces at the end of afternoon), contributing to make the production diagram more comprehensive throughout the day, as each facade will produce better at a certain time of day. In addition, the accumulation of dust and other debris is also minimized with the panels installed vertically.

Additional data analysis of the type of building ownership, will be valuable for the estimation of proper financial tools to implement individual solar solutions. Single-family buildings and buildings with multiple owners have different eligibility criteria including the completion of an energy audit to the common areas, administrative barriers (bank loans, individual loans for a common purpose), organizational issues (since majority of the owners need to agree with the investment). Solutions for financial mechanisms could be achieved by streamlining the procedures for the application to feed in tariff incentives or, facilitating the lease of the commonly owned roof space to third parties.

SOLUTION STRATEGY: Increasing the use of solar energy by upgrading GIS infrastructure

What are the main blockers and risk and how will the be overcome? What major uncertainties still need to be investigated?

The biggest blocker can possibly be a political will to implement and develop this solution. The integration of solar systems in an urban environment has its obstacles as well. First one is that solar resource is not constant, it has fluctuations in daily availability of sun. Second one is that the present electricity infrastructure and its potential to absorb surplus of electricity produced in the network is not at the highest level. Due to the topographic and morphological characteristics of the urban environment, buildings are subject to dynamic shading phenomena, there may be technological challenges to develop all the features of the solution in an expected period of time. Energy management so far, was based on buildings that are public owned. The idea of this solution can come up to some obstacles whether it would be possible to accomplish management of all the buildings, public and private owned. Additionally, there can be technical issues of implementing the vertical solar solutions. Prices of solar solutions will be an important factor of optimization of this technology in city of Split.

SOLUTION STRATEGY: Increasing the use of solar energy by upgrading GIS infrastructure

What is the business model?

This solution will be free for the use of all the citizens, since it will be a tool owned by City of Split. Furthermore, its feasibility and upgrading will depend mostly on the needs of citizens, so the usage and preferences of citizens will be updated on a regular basis to deploy the tool that is custom friendly and has all the functions required for implementation of optimal solar solutions on individual level.

For planning purposes, it is essential to assess the solar potential. This task requires knowledge on the location of optimal areas and this information can be obtained through 3D solar modeling. The methodologies for data modeling, such as the one presented here, may be the first step to promote building projects (renovation, rehabilitation and urban regeneration) and for the definition of policies for urban planning, including: mechanisms for accessing local grants for adoption of solar technology in order to facilitate social equity of access; implementation of urban blocks which are emission free or have reduced-emission of CO₂, promoting urban design optimized for sun exposure, sharing best practices and list of available solar technologies, or implementing the system of energy management for all the buildings in city of Split private or public owned.

SOLUTION STRATEGY: Increasing the use of solar energy by upgrading GIS infrastructure

What, at the highest level, are the main stages from today to getting this solution at full impact?

The variables that will be included in this solution are the stages that needs to be accomplished to get this solution at full impact.

Firstly, the political will to implement this solution.

Technical experts will start to develop solar potential of buildings through technical algorithms with 3D data.

Energy management processes, energy consumption and savings in residential buildings needs to be developed with cooperation of City of Split with HEP d.d. as the biggest national provider of electricity. They have the biggest infrastructure and network for electrical energy that will serve as a basis for this stage of solution.

Financial mechanisms that can support solar transition are planned to be collected data of available funding at regional, national and international level.

Sharing best practices and list of available solar technologies will be developed in accordance with technical sector and will provide newest data on the available technology and pricing

Deploying the solution

Upgrading the solution with accordance to citizens needs

Solution no. 1

Solution name: Digital services platform

Link to the vision

What is your solution solving for

Digitalized internal work processes of City of Split will contribute to achieve more sustainable solution for digitalization of city's services and enable easy access for the benefit of its citizens

Description

What are the key features of your solution?

New bidirectional communication channel to the citizens, interconnection of stakeholders due master data management, digitization of internal work processes, points of contact minimization

Benefits

How does your solution create value?

Backup support team, new mobile and web user interface and administrative interface, easy access to public information, mobile/online payment for public services connected onto platform, new digital marketing space, verified and centralized user data, unlimited development capabilities,

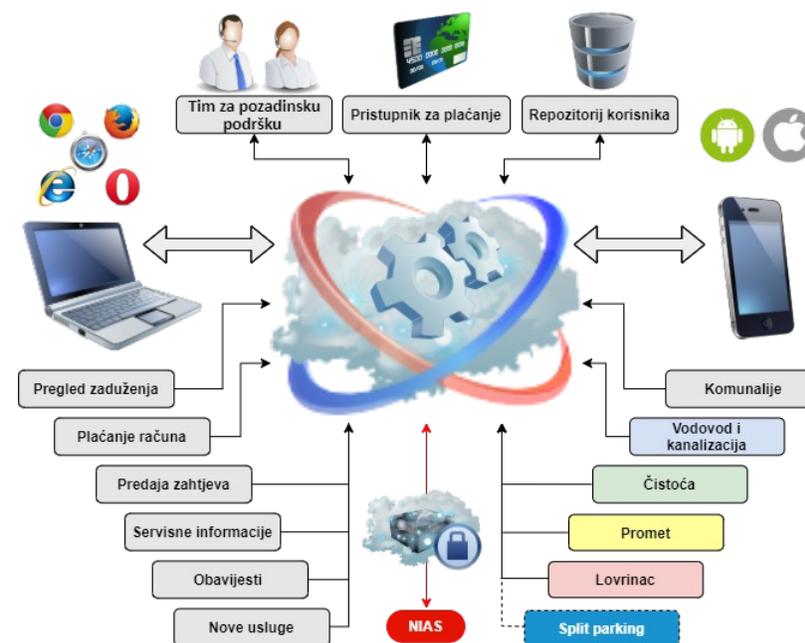
Scaling

In what ways could you make the solution rapidly scale? E.g., capabilities, funding, etc.

Additional human resources plus funding will drastically increase growth capabilities of Split Smart City platform.

Bonus zone

Any visualisation you'd throw in to bring your solution to life



Next steps

What key questions would you want to answer before pursuing this further?

Is there a better way to provide digital services to larger group of citizens (eg. senior citizens)?

Local enabler ecosystem mapping: Solution 1. City of Split Digital services platform

Local enablers of relevance

Local enablers, beside city government that will face new election processes this summer 2021, are: Vodovod i kanalizacija – water supply and sewerage company; Promet – public transportation company; Split parking – public parking and garages concessionaire company; Čistoća – waste management company; Lovrinac – funeral service.

Solution maturity

Right now, there is very low interoperability between currently used digital tools within city administration. Current situation is unsustainable and with very low efficiency. Linkage between digitally stored files is murky and path is unclear so users need to access multiple databases just to gather information on the same matter. Besides that, tons of information are not even digitalized (yet) so it is practically impossible to centralize it or link it to anything. This causes great latency in work process whether you just fill the form or doing reports. In the end, that leads to low access of public services especially through digital channels.

Wider thoughts and reflections on appeal of solution

It is essential to digitalize work processes within City of Split. That will lead us to more effective local government and enable easier services and information access for the benefit of our citizens and SME's. Platform can be best described as "live Christmas tree". As tree grows, new decorations will be added – likewise new functionalities and services added onto a platform.

SOLUTION STRATEGY: City of Split Digital services platform

What does the solution set out to solve?

The city of Split is facing challenging times. Like all other cities, our city is a dynamic and vital part of society and a regional engine of social, economic and technological development in the County.

If the City of Split intends to improve its performance (environmental, transport, economic and social) it is necessary to base its future development on the concept of "smart city" - a city suitable for the future, focused on real possibilities and able to provide credible perspectives to its citizens; the question is "in what way?".

During past ICC workshops three main paths are recognized and shows us a way:

Expanded range of digital services to citizens;

Centralized data repository, master data management, data verification and cleansing;

Providing digital tools and data to support productivity and economic development for SMEs especially in renewable energy and water mgmt. systems.

Further, we will discuss about first two priorities which can be summarized under solution name: Digital tools and data management

This solution is tightly linked to the vision (*To continue developing a digitalized and horizontally integrated public administration system that would provide better services to citizens.*) as the matter a fact it is in the core of the vision statement 1.

Right now, there is very low interoperability between currently used digital tools within city administration. Current situation is unsustainable and with very low efficiency. Linkage between digitally stored files is murky and path is unclear so users need to access multiple databases just to gather information on the same matter. Besides that, tons of information are not even digitalized (yet) so it is practically impossible to centralize it or link it to anything. This causes great latency in work process whether you just fill the form or doing reports. In the end, that leads to low access of public services especially through digital channels.

So far, information is collected about our internal capabilities and resources (human resources, ICT resources, knowledge base, etc..) – sort of in-deep SWOT analysis has already been taken. This showed us what our biggest threats is and where our greatest opportunity lies.

SOLUTION STRATEGY: City of Split Digital services platform

What are the main features of the solution?

It is essential to digitalize work processes within City of Split. That will lead us to more effective local government and enable easier services and information access for the benefit of our citizens and SME's.

Transforming the City's business into a form accessible through digital channels not only ensures modern business but in these moments of epidemic ensures that we do not have a division of citizens into those who can use the City's services and those who cannot due to health circumstances (or self-isolation). There are no second-class citizens. In short: the necessity of digitization is no longer a convenience but a "must have".

This rapid change of perception (due to the pandemic) and increase the receptivity of all ages in daily usage of applications, web sites and digital tools at all will not repeat in a near future. Therefore this flurry of interest is something that we should definitely take advantage of and capitalize by urgent opening of digital services the citizens of Split.

The "new normal" has shown in the short term that the digitalization of business can be carried out independently of the product, organization or market. From virtual markets for which the internet and social networks were a different universe until yesterday, to restaurants that delivered their products to order. So, what makes local government as an exception?

For sure, one of the things that "except" local government is lack of skilled and motivated ICT experts, which is chronic disease in more-less all local governments. The City just needs a working group of experts, in a good ratio of experience, knowledge and youth with a broader view of business and without restrictions or fear of technology. It is essential to find out the adequate paygrade roles in City organigrams that will attract those afore mentioned experts.

It is not intention to gain programmers to invent solutions – on contrary, it urgent to gain people who will enable quantum leap in digitalization (from this point of view) with existing solutions and technologies. Background support team is crucial for platform overall success.

If that do not occur there is always solution to hire third party providers to bridge the gap. It's short term solution - but it's solution.

Given the low rate of digitization of services, there is a huge space for progress and improvement of the system within itself and in interaction with citizens. Although these are two parallel and complementary processes, they do not necessarily have to be time-aligned.

SOLUTION STRATEGY: City of Split Digital services platform

Why is *this* the right solution for the city?

That is why City is already establishing web and mobile interface for public use (Split Smart City platform) which can be considered as the "cornerstone" of the digital transformation of services. Platform is a new bidirectional communication channel between citizens and city government and focal point for all future published e-services that City and companies, societies and institutions (co)owned by the City can and will offer.

Since we build and design platform from the scratch unlimited stakeholder list wasn't really an option. So, for the first two development phases (2 yrs.) we decided to include some of City (co)owned companies where citizens have some sort of property. So, stakeholders are – beside city government itself:

Vodovod i kanalizacija – water supply and sewerage company;

Promet – public transportation company;

Split parking – public parking and garages concessionaire company;

Čistoća – waste management company;

Lovrinac – funeral service.

Due that, at the end of the January public contract signage for platform delivery was held at the city Hall where all of above listed companies CEO's, CFO's or head of ICT department were present and briefed with presentation about this ongoing project and expectations of their engagement level by PM of the project. Each of above companies obliged to appoint at least one member to "Split Smart City platform" project.

Some companies, societies and institutions (co)owned by the City are far more digitalized from the City itself (eg. Split Parking, Vodovod i kanalizacija), so it is not wise to wait same level of in-house digitization to provide citizens with digital services. We need push ourselves to "run" instead to "walk the distance".

SOLUTION STRATEGY: City of Split Digital services platform

What are the main blockers and risk and how will the be overcome?

Main assumption for overall digitalization success is continuity. Therefore, the main assumption and possible blocker is political will to (dis)continue digitalization process. Election process is something than cannot be affected, but we can hope that general perception has risen and there will be consensus over digitalization topic no matter which party provides future Major.

If continued (digitalization process), “whole in one” method should be abandoned definitely and “small steps” method should be applied further down the road. “Whole in one” method so far has brought us partially solutions to some problems, and that is probably main reason why previous attempts have failed. Therefore, platform is large project but it is going to be delivered in small feasible steps – phases. Those steps should be accompanied with some organizational changes. One of the most important change is establishment of background team.

The background team is a prerequisite for the success and good acceptance of the Split smart city platform. There will answer numerous questions and provide continuous support in all phases of the project. It should primarily consist of existing employees (if possible) who will gain skills to work within the administrator interface of the Split smart city platform. Given the volume of requests and the speed of acceptance of the new communication channel by citizens, there is probability that it will be necessary to consolidate all IT advanced employees into this team. The success of the Split smart city platform is directly linked to the strength of human resources within the support team.

The value of such a team will grow over time and the support team will eventually grow into an expert team - crucial during further digitization of existing business processes.

By providing background support, they will be best acquainted with the actual course of the process in reality and how far it is from what’s described in the "Book of Work Process". Therefore, their knowledge will be vital to any business analyst during the process optimization prior digitalization.

SOLUTION STRATEGY: City of Split Digital services platform

What is the business model?

Platform can be best described as “live Christmas tree”. As tree grows, new decorations will be added –likewise new functionalities and services added onto a platform. Growth is almost infinite and limitations exist solely in human resources and political will.

From financial point of view digitalization is largely dependent on EU co-funding. Not just for the platform development (user and admin app) and hardware support – that’s already contracted; but also for all the other parallel activities that will enable digital synergy and “wow effect” for platform users.

Data verification and cleansing prior centralized data repository establishment is one of the things that should be EU co-funded. Master data management and system integration is natural sequel of above-mentioned activities. Having on mind new EU Multiannual Financial Framework (MFF) for the period 2021-2027 adopted Mechanism for Recovery and Resilience co-funding should not be a problem.

Next Generation instrument - 750 billion€ fund; will help Member States to overcome the economic and social consequences of the COVID-19 pandemic and ensure that their economies make the green and digital transition and become more sustainable and resilient. In order to receive support from the Recovery and Resilience Mechanism, EU countries are asked to identify a coherent package of projects, reforms and investments in six policy areas, namely:

green transition;

digital transformation;

smart, sustainable and inclusive growth and jobs;

social and territorial cohesion;

health and resilience;

policies for the next generation, including education and skills.

SOLUTION STRATEGY: City of Split Digital services platform

Split Smart City platform is fitting in at least three of six policy areas.

Platform's primary purpose is not to gain financial resources, but with platform's good acceptance, it will become virtual advertising space that will allow local companies easy access to citizens. There lies permanent source of income.

Primary benefits of digitalization process in total are:

- relieving human resources from repetitive tasks;
- increase in the City Administration efficiency and establishment of KPI's;
- availability of personalized user information;
- citizens insight into debts for utilities and their online payment;
- enabling City services/forms in electronic formats;
- creation of various reports (employees efficiency, debts per user, work order status, etc...).

SOLUTION STRATEGY: City of Split Digital services platform

What, at the highest level, are the main stages from today to getting this solution at full impact?

Data verification and cleansing – standard procedure and solution

Centralized data base / repository – standard procedure and solution

Master data management – standard solution

System integration – custom solution

Background support team – standard solution

Smart city app & web site – custom solution