## 12 LJUBLJANA FORUM



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### FUTURES OF CITIES

**SUSTAINABLE - SMART - INCLUSIVE - RESILIENT** 



Conference

October 6<sup>th</sup> - 7<sup>th</sup> 2022 • Ljubljana Castle, Slovenia

## Ljubljana Agreement 2021 for next generation of European cities

As a purpose driven event Ljubljana Forum's aim is also to influence the policy making arena from the bottom-up perspective. A very successful example of having influence in 2021 is Ljubljana Forum's impact on Urban Agenda for European Union, which was reinforced by Ljubljana Agreement during Slovenian EU Presidency in November 2021. Through Urban Forum, which derived from Ljubljana Forum, we influenced the EU Presidency event on next generation of European cities. Urban Forum is a Slovenian multi-stakeholders platform for addressing city challenges composed by Slovenian City Municipalities, Ministry of Environment and Spatial Planning and Go Foresight - GFS Institute.

New phase for European cities under the umbrella of the Urban Agenda for the European Union.

si2021.eu

EU policies and legislation have a considerable impact on the development of European cities. How cities operate has an impact on the successful implementation of EU policies. As much as 70 percent of all measures to deliver EU policy goals are implemented at local level. During the Slovenian Presidency to the European Union in November 2021, EU Ministers responsible for Urban Matters adopted the

Ljubljana Agreement and its Multiannual Working Programme. The meeting was also attended by the European Commissioner for Regional Policy and representatives from the European Parliament (EP), Committee of the Regions (CoR), European Economic and Social Committee (EESC), European Investment Bank (EIB), Eurocities and Council of European Municipalities and Regions (CEMR), as well as Norway and Switzerland and several observers.

The EU Urban Agenda, established in 2016, is aimed at improving the quality of life in cities in partnerships with different stakeholders. The Ljubljana Agreement aimed at the removing barriers that cities face in the fields of regulation, funding and knowledge. It contains the fourteen thematic areas of cooperation and adds four new topics during the Slovenian EU Presidency: "Urban Greening", "Sustainable Tourism", "Food" and "Cities of Equality".



Synthesis report on

FUTURES OF CITIES

**SUSTAINABLE - SMART - INCLUSIVE - RESILIENT** 

**CITIES IN 2030** 

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### Introduction

The year of 2022 marked a challenging year for European cities. First of all we would never imagine that during the Ljubljana Forum gathering in the first week of October 2022, the European cities, more precisely Ukrainian cities, would be under bomb attack by neighbouring Russia. Lasting 32 weeks, the war has already forced 8 million refugees to leave their homes. And when this report is published in February 2023, the attacks on cities are still ongoing.

In 2022 we witnessed how the war in Ukraine has impacted urban resilience. Critical city infrastructure – water and energy supply, electricity, public transport, food supply and the whole sector of logistics are all under threat. Ljubljana Forum's main purpose is to help co-create the cities of wellbeing for its citizens and visitors, but in light of the events, when even the basic city infrastructure is under attack, we also had to think of ways to cocreate a resilient cities.

We discussed new social and economic development, while also having in mind the fragility of cities. Complexity of city challenges calls for an inclusive manufacturing eco-system aimed to manage digital transformation and sustainability. Especially in order to reach the latter we have to step out of comfort zone and change our

City leaders presented green transition challenges and plans to overcome them, while also higlighting concrete projects and good practices of building smart and sustainable cities. Industry representatives show cased solutions covering energy supply, smart city solutions, IoT digital transformation of city services, data collection with sensors, railways mobility and other solutions also summarised in the following pages of the report.

Being inspired by stories and people in the report what can be done next? Building partnerships for creation of new projects and further exchanging of good and less good practices is crucial for never ending improvment of cities for people.

Blaž Golob







Miran Gajšek of Ljubljana Forum, Head of department for urban planning, City of Ljubljana



**Ana Struna Bregar** Director of CER Sustainable Business Network



Blaž Golob Ljubljana Forum



Janja **Kreitmayer** Mckenzie at Ministry of the **Spatial Planning** 



Ibon Zugasti Managing Director at



Nermina Čolić Bosnian





### On 6<sup>th</sup> and 7<sup>th</sup> October 2022, the 12<sup>th</sup> Ljubljana Forum took place in Ljubljana. The theme of this year's Forum was Climate Neutral and Smart Cities by 2030.

For years, the international Forum is connecting many distinguished guests from public and private sector. At the same time, it is the place recognizing new initiatives and projects focused on improving the wellbeing of the cities. In addition to high representatives from the cities in the region the Ambassador of Nigeria to Romania and Slovenia, H.E. Safiya Ahmad Nuhu, and the president of Slovenia-Nigeria Chamber of Commerce, Fred Uduma, attended the Forum and joined the discussion. The participants were addressed by the Chairmen of the Ljubljana forum Blaž Golob and the Mayor of Ljubljana Zoran Janković.

## Organizers and partners of Ljubljana Forum 2022

- AAMI Corporation
- Antiq Palace
- Bosansko akademsko društvo v Sloveniji
- BTC City
- Center of Competence for Smart Cities
- CER
- City of Ljubljana

- ELES
- EventNika
- European Investment Bank
- Foresight Europe Network
- GoForeSight Institute
- Libelium
- · Ljubljana Castle
- Sigfox Slovenia by Heliot Europe
- Petrol
- Slovenian Nigerian Chamber of Commerce
- Slovenian Railways

- T2
- TIA Summit

#### Participating cities

- City of Ljubljana
- · City of Beograd
- City of Sarajevo
- City of Podgorica
- · City of Rijeka
- City of Pristina



Ljubljana Forum is an annual gathering that combines knowledge and experience of city governance and defines key areas, visions, and strategies of the future development of cities.

The aim of Ljubljana Forum is to promote opportunities for future development of cities and metropolitan areas of the Southeast European region.

The objective of Ljubljana Forum is to Offer a framework for cooperation, networking, and learning among various stakeholders: political decision-makers, city leaders and city administration, investors, businesses, civil society, researchers, academics, and students.

The objective of Ljubljana Forum is to empower this network of stakeholders to create prosperous future of cities through researching, developing, and implementing the best practices of urban development.

## City Leaders, Mayors / Deputy Mayors / Directors at Ljubljana Forum 2022



**Zoran Janković** Mayor of Ljubljana



Marko Filipović Mayor of Rijeka

**Perparim Rama** Mayor of Pristina



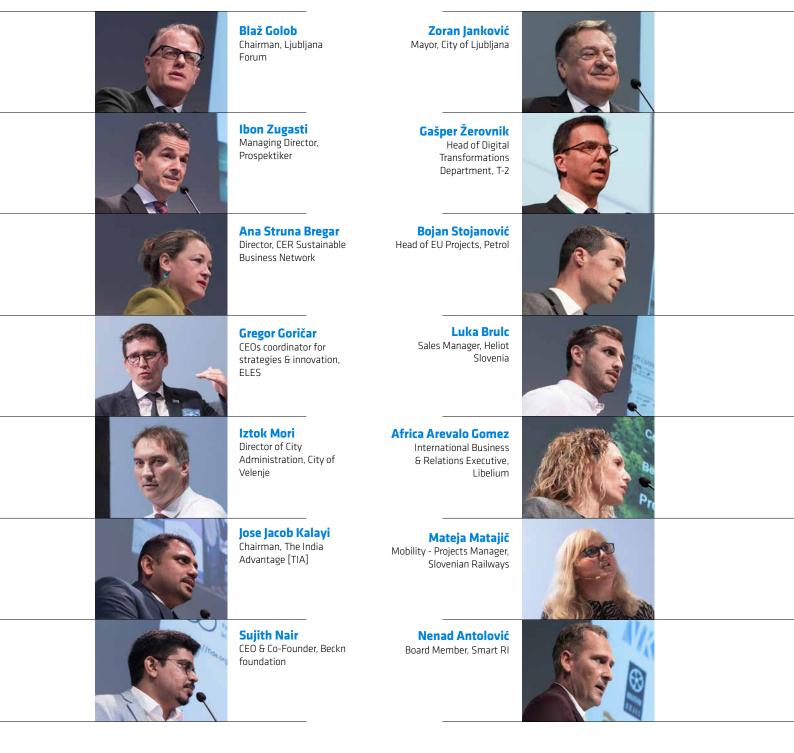
**Vesna Vidović** Deputy Mayor of Belgrade

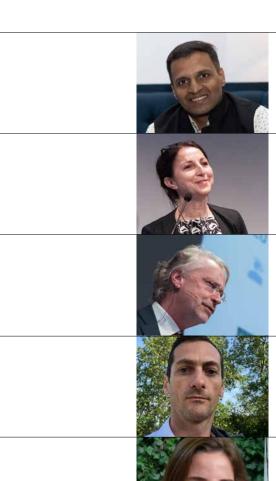


**Anja Margetić**Deputy Mayor of
Sarajevo

Marjan Junčaj City Manager of Podgorica

## Speakers of Ljubljana Forum 2022





Prathaap B. Rao Founder & Innovator, PotHoleRaja® GridMats™ Smart Roads



**Jan Künne** Senior Consultant, Enterprise Development Group

**Francesco Ferero**Senior Officer – Lending
Adriatic Sea Department,
European Investment Bank

Maria Blanco Herbosa Environmental Specialist -Circular Economy, European Investment Bank

**Ana Tisov** Project Manager, Huygen



**Tomaž Lanišek** Development and Smart City Manager, City of Kranj

**Matjaž Valant**Dean, School of
Environmental Sciences,
University in Nova Gorica

**Matej Težak** Co-founder, ZW Slovenia









## Moderators of Ljubljana Forum 2022



### About the agenda

### Thursday, 6<sup>th</sup> October 2022 Place of venue: **Ljubljana Castle**

#### Session I: Opening & Keynote speech

Moderator: Ms. Helena Ajdnik, CEO, Kreativus

Time	Session	Speaker
9.00 - 9.15	Official Opening of Ljubljana Forum 2021 Introduction & Welcome address	Mr. Blaž Golob, Chairman, Ljubljana Forum
	Keynote speech: Cities as a leaders of New Economy in 2030	Mr. Ibon Zugasti, Managing Director, Prospektiker

#### Session II: 100 Climate-Neutral and Smart Cities by 2030 - EU initiative

(Sustainable - Smart - Inclusive - Resilient) Moderator: Mr. Jan Künne, Digital Nomad EDG

9.45 - 10.45	Carbon Neutral Cities by 2030	Ms. Ana Struna Bregar, Director, CER Sustainable Business Network
	Resilient Cities in 2022 towards 2030 - Heat Switching	Mr. Gregor Goričar, CEOs coordinator for strategies & innovation, ELES
	EU Mission: Climate - Neutral & Smart Cities Cities Ljubljana - Kranj - Velenje	Mr. Iztok Mori, Director of City Administration, City of Velenje
	Enabling collaborations to Build Smart cities of the Future [EU & India]	Mr. Jose Jacob Kalayi, Chairman, The India Advantage [TIA]
	Smart cities through de-centralisation & digital democratisation of the marketplace & Commerce	Mr. Sujith Nair, CEO & Co-Founder, Beckn foundation

#### Session III: Round Table of Mayors - Cities in 2030 - Climate Neutral and Smart

(City mayor's perspective)

Moderator: Ms. Helena Ajdnik, Journalist CEO Kreativus

Ljubljana / Zoran Janković, Mayor, Belgrade / Vesna Vidović, Deputy Mayor, Sarajevo / Anja Margetić, Deputy Mayor, Podgorica / Marjan Junčaj, City Manager – Rijeka / Marko Filipović, Mayor, Priština / Perparim Rama, Mayor

#### Session IV: Industry solutions for cities

20.00

Moderator: Mr. Jan Künne, Digital Nomad EDG

14.00 - 16.15	T-2 d.o.o.	Mr. Gašper Žerovnik, Head of Digital Transformations Department T-2
	Petrol d.d.	Mr. Bojan Stojanovic, Head of EU Projects, Petrol
	HeliotEurope d.o.o.	Mr. Luka Brulc, Sales Manager, Heliot Slovenia
	Libelium	Ms. Africa Arevalo Gomez, International Business & Relations Executive, Libelium
	Slovenian Railways	Ms. Mateja Matajic, Mobility - Projects Manager, Slovenian Railways
	Smart RI	Mr. Nenad Antolovic, Board Member, Smart RI
	PotHoleRaja® GridMats™ Smart Roads	Mr. Prathaap B. Rao, Founder & Innovator, PotHoleRaja® GridMats™ Smart Roads

Ljubljana Forum Reception & Award Ceremony - Antiq Palace Hotel

Moderator: Ms. Helena Ajdnik, Journalist CEO Kreativus

### Friday, 7<sup>th</sup> of October 2022 Place of venue: **Ljubljana Castle**

#### Session V: Financial Instruments & Knowledge for Cities

Moderator: Frane Šesnić, CEO of Zagreb Innovation Centre

Time	Session	Speaker
9.15 - 10.30	New Business Models for Cities - Circular City Governance	Ms. Janja Kreitmayer Mckenzie, Secretary, Ministry of the Environment and Spatial Planning
	"Urbanscapes" as Innovation Launchpads for Moon Shot Ideas	Mr. Jan Künne, Senior Consultant, Enterprise Development Group
	Video presentation on Circular City Centre by European Investment Bank – EIB	Mr. Francesco Ferero, Senior Officer – Lending Adriatic Sea Department, European Investment Bank, Ms. Maria Blanco Herbosa, Environmental Specialist - Circular Economy, European Investment Bank

#### Session VI: Presentation of projects

Moderator: Frane Šesnić, CEO of Zagreb Innovation Centre

10:30 - 11:30	Save the homes	Ms. Ana Tisov, Project Manager, Huygen
	From Smart City to Smart Region via Satellite IoT	Mr. Tihomir Divjak, Consultant, GFS Institute
	Benchmarking the role of the Public Sector and Location Intelligence in Smart Spaces	Mr. Tomaž Lanišek, City of Kranj
	Center of green technologies	Mr. Matjaž Valant, Dean, School of Environmental Sciences, University in Nova Gorica
	Zero Waste pallets for Carbon Neutral Cities	Mr. Matej Težak, Co-founder, ZW Slovenia
	"GOTIVA" Platform for Cities	Ms. Nermina Colic, Bosnian Academic Association in Slovenia

#### Round table on Digital entrepreneurship for Climate Neutral & Smart Cities in 2030

Moderator: Mr. Blaž Golob, Chairman of Ljubljana Forum

13.00

12:10 - 13:00 5 selected speakers on New Emerging Technologies for cities

Concluding remarks & Announcement of the 2023 Ljubljana Forum

## Keynote speech Cities as leaders of New Economy in 2030



Mr. Ibon Zugasti, Managing Director, Prospektiker

#### »Complex solutions are needed for complex issues.«

At the beginning of the 21st century, we have experienced profound and accelerated urban transformations which suggest a distinct historical era; one in which economics, politics, society, and the environments in which we live, are affected decisively. This process of urbanization is unprecedented, as we now speak of cities without limits. In 1950, approximately 30% of the population could be considered urban. In 2000 the percentage was close to 50% and, according to estimates, in the year 2025; approximately 70% of the world's population will be living in urbanized areas. Demographers also predict that by 2025 there will be more than 30 megacities, with more than 8 million people, and more than 500 cities with more than one million.

But not all the cities have been successful in the process of urbanization. In a matter of decades, many prosperous cities, for example Detroit, went into decline, even if they had been industrial world leaders in the past. Meanwhile, some other cities and regions worldwide are succeeding with economic development strategies at the intersection of manufacturing and economic democracy. Inclusive manufacturing ecosystem is fundamental to advancing systemic solutions that are transformative for individuals and communities. Before the pandemic we have discussed global challenges and had prepared a common agenda for 2030. In the last years, we have learned that this is not enough. It is clear now that the UN and Sustainable Development Goals cannot address the global challenges completely as such complexity calls for in-depth understanding of the issue.

## 100 Climate-Neutral and Smart Cities by 2030 – EU initiative (Sustainable – Smart - Inclusive – Resilient)



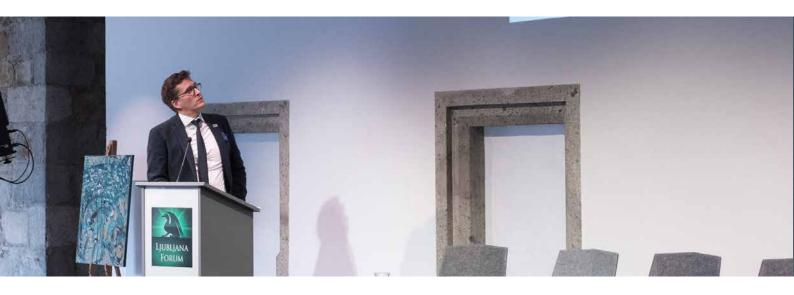
Ms. Ana Struna Bregar, Director, CER Sustainable Business Network

»If we continue with the business as usual, we are doomed. This transformation is not a competition, it is a mission of our society, our generation.«

#### The Future of Cities: Bright or Bad?

Cities are vital in tackling the global climate crisis as they are the key contributor to climate change because our urban activities are a major source of greenhouse gas emissions. Today we see many cities racing to set ambitious climate goals, developing innovative climate adaptation and climate mitigation plans. We already have all the cutting-edge technologies to achieve climate neutrality. But we do not want to lose the comfort that the vast majority of the world's population has gained throughout history.

As J. Troni said: "The story how the cities will tackle climate change will be the story how we redesign and rebuild the urban environment. The more we delay, the bigger the challenge becomes." We have to rethink our values and design principles of the systems, organizations and the business, products and services. But above all, we have to step out of our comfort zone and change our habits. We all want to live in a healthy city so let's make the future green.



Mr. Gregor Goričar, CEOs coordinator for strategies & innovation, ELES

»Current energy prices are challenging but also an opportunity for an optimal green transition.«

#### Resilient Cities in 2022 towards 2030

The cross-sector of the heating and cooling vs. electricity systems modelling and progressive cross-sector concepts with a holistic focus to the energy system are at the core of work of ELES Ltd. In collaboration with city of Ljubljana this approach is supporting energy systems to cope with seasonal demand and supply variations. It was established that heating represents an important seasonal energy vector where energy transformation should be supported by various options, not only through electrification.

Regarding the future uncertainties, the flexibility of the cities in terms of the source of energy supply calls for System Operators to promote energy carriers, which provide a maximum level of long term flexibility. Denmark has organically developed a system that supplies more than 60% of heating through the district heating systems which provides an efficient interface to other energy carriers to cope with seasonal variations. This system also showed a great level of resilience in the recent energy crisis. ELES on the other hand developed a concept called Heat Switching, which looks for such solutions to be developed on a systemic level through the energy transformation of the cities and communities in Slovenia.



Mr. Iztok Mori, Director of City Administration, City of Velenje

»We have perfect support from the EU Council. DG Energy is very supportive on our journey of the green transition.«

#### EU Mission: Climate - Neutral & Smart Cities Cities Ljubljana - Kranj - Velenje

Slovenia is proud to have three cities in the EU Mission focusing on becoming climate neutral. Our activities and actions strive for efficient use of energy and the use of Renewable Energy Directive, sustainable transport solutions etc. Our goal is to preserve environment and enable the highest quality living conditions for all.

Velenje is one of these cities and is at the breaking point because the so called "black gold" excavation will stop in 2033 as it is written in the National strategy for coal mining and restructuring. The city of Velenje must find a new way for further development and growth. In the next decade, we will have to provide new jobs and find new, green source for our district heating system on which the entire population of the city depends. Since we are strongly connected to energy sector we believe that this is still our prime field for future development. But this time in a more green and efficient way.



Mr. Jose Jacob Kayil, Chairman, The India Advantage [TIA]

»While dealing with a mass of people and solutions at scale, you must be aware that any mistake has great consequences. At the same time the impact can be huge if the changes are sustainable and green.«

## Connecting Indian - Bangalore Smart City Hub with European Ljubljana - Smart City Hub

Building a sustainable future is a global requirement and in this context collaboration is the force multiplier that can enable good ideas in sustainability to attain scale and impact. The India Advantage Summit is an example of a platform for exchange of ideas and solutions striving for sustainability.

The start-ups ecosystem in India is helping to scale solutions and solve problems that are prevalent in India, but the learning's from these start-ups can also inspire solutions around the globe. For this reason, the Ljubljana Forum and the TIA Summit signed an MOU to collaborate and provide opportunity to start-ups, SME's and companies in the Indian and European ecosystem to collaborate and work with each other especially in the sustainability space. This way the smart city hubs are connecting the change makers that are accelerating the transition to a greener future.



Mr. Sujith Nair, CEO & Co-Founder, Beckn foundation

»We are building solutions that are in service of the people. For this reason, we try to open and decentralize large platforms in order to facilitate value for the users.«

#### **Beckn Protocol - Building Open Networks for Digital Economy**

Over the last few decades, rise of platforms at incredible speeds and scale has changed how businesses operate across many commerce sectors like mobility, logistics and retail. The approach however has a flip side of excessive concentration of power in the hands of a few big platforms. For small businesses operating in cities, the ability to do business online mainly depends on big platform intermediaries that aggregate them and put themselves in the centre of exchange between the providers or sellers and the consumers or buyers. Governments across the world are formulating policy responses to deal with this problem.

Beckn protocol is an answer that obviates the need for a central intermediary. It enables building a decentralised digital market where sellers and buyers can discover each other naturally and do business efficiently and at a fraction of the costs incurred by the traditional intermediary-centric approach. Beckn protocol is a set of open-source specifications that help cities and countries to reimagine the digital market as an open network, be it for mobility, logistics, travel, stay or healthcare. It allows any two platforms to communicate and execute digital economic transactions like booking a taxi, ordering groceries online, booking a delivery pick up and drop or booking a teleconsultation with a doctor in the neighbourhood.

## Round Table of Mayors Cities in 2030 - Climate Neutral and Smart





Mayor of Pristina, **Perparim Rama**, City Manager of Podgorica, **Marjan Junčaj**, Deputy Mayor of Sarajevo, **Anja Margetić**, Mayor of Ljubljana, **Zoran Janković**, Deputy Mayor of Belgrade, **Vesna Vidović**, Mayor of Rijeka, **Marko Filipović** 

The Mayor's Round Table had a vibrant discussion on the priorities of the city development by 2030. The Mayor of Ljubljana, **Zoran Janković**, the Deputy Mayor of Belgrade, **Vesna Vidović**, the Deputy Mayor of Sarajevo, **Anja Margetić**, the City Manager of Podgorica, **Marjan Junčaj**, the Mayor of Rijeka, **Marko Filipović**, and the Mayor of Pristina, **Perparim Rama** have identified their city challenges in the fields of energy efficiency, smart city and other green city transformation projects. They have stressed that cooperation and keeping up with the needs of the citizens is essential for the future of all cities, which are facing an increasing number of challenges, including climate change, the energy crisis, and digitalization.



»All cities are partners in the green transition. We have to change perspective and focus on collaboration not differences.« **Zoran Janković,** Mayor of Ljubljana

#### City of Ljubljana

Any time in history is the time of crises. At the moment, the most pressing issues are war in Ukraine, rising gas prices as well as increasing costs of life. Since the prices of gas are unpredictable it is almost impossible to budget the city projects. For this reason, the city of Ljubljana started preparing to open

the garbage factory and simultaneously push for more projects on renewable energy. The municipality continuously ensures the same level of wellbeing for the citizens, who live together while respecting all the differences. Even though change will be the only constant in our lives, this cannot affect the quality of living in the capital of Slovenia. In the same manner, it is vital to exchange knowledge and solutions, stay together in times of crisis and stand for each other. We need to celebrate the positive changes in our community and great achievements of others sharing the vision of more sustainable future.

»A smart city does not only mean the introduction of new technologies, but also includes the utilization of existing ones and their improvement with better efficiency and smarter management.«

**Vesna Vidović,** Deputy Mayor of Belgrade



#### **City of Belgrade**

The city of Belgrade is switching to the green energy since energetic efficiency is becoming problematic due to the gas dependency. The expected costs that will affect all the citizens is the biggest challenge at this moment. For this reason, the local government is transforming waste management and reducing the air pollution at the same time in collaboration with investors from Germany. In addition to the energy sector, there are many projects in green mobility, from building the green metro to electric buses and P+R parking to bike lanes and pedestrian zone in the centre. The city aims to have more green areas by 2030 in order to fight air pollution and provide a higher quality of life for its citizens.

#### **City of Sarajevo**

Air pollution is the biggest challenge for the city of Sarajevo. It is caused by surrounding mountains. On occasion people can die due to the polluted air. Therefore, sustainable development is most certainly one of the city priorities until 2030. Becoming a climate neutral city is high among our goals. That is why, together with investors and companies we follow the principles of environmental protection, energy efficiency, and sim to use of

»It is important to nurture cohesive, strengthening local policies which will sustain the results we have accomplished so far, and enable further development of the city, while preserving the quality of life of its citizens.«

**Anja Margetić,** Deputy Mayor of Sarajevo



renewable energy sources as often as possible. Even though complicated government organization based on cantons makes it harder to contribute to the implementation of changes, the city is making slow and steady progress in the green transition.



»Successful smart cities are built on data and real needs of people. Hence, Podgorica created business club for all sectors that receive public opinions before each meeting in addition to city representatives responding to every message from the citizens.«

Marjan Junčaj, City Manager

#### **City of Podgorica**

Collaboration and investments are crucial for future city development. Each city has to plan the budget, first and foremost having in mind the most vulnerable groups of citizens, and making their lives easier, but at the same time make efforts to continue the capital investments and projects of the city, especially the ones directly impacting environmental protection. The local government in Podgorica is focused on rising the quality of life in the city from 2020-2025, especially because during the working time half of the population is in the capital city. There wellbeing of the city has a great impact on the whole country. In order to protect the citizens, we must have access to all data and enable them to co-create more liveable and sustainable city. Last but not least, there are incentives for big sustainability project such as Porto Montenegro that are contributing to the global fight against climate change.



»Collaboration of different stakeholders in the city is crucial. This way the city becomes the urban laboratories for companies in partnership with universities.«

Marko Filipović, Mayor of Rijeka

#### **City of Rijeka**

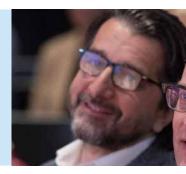
The city of Rijeka is becoming recognized as a great investment potential. On the other hand, Croatia will enter the Euro zone, which is why we expect similar challenges as Slovenia had. Even though the Euro will affect the prices, it will give the Croatian economy more opportunities in the global market. Hence, our vision for the city until 2030 is to become a smart, open and resilient city while staying green and clean city adapted to the needs of all citizens. Hence, Smart Rijeka 2030 is a regional hub for the Southeast Europe actively supporting development and implementation of smart solutions in the city management and city infrastructure based on technology. We are convinced that this systematic approach will create an opportunity not only to fight current challenges, but also to provide solutions for the ones awaiting all our cities in the future.

#### **City of Pristina**

Public sector is struggling to keeping up with the development i.e. building enough schools, roads, etc. Nevertheless, the city of Pristina is keeping sustainability at the core of the projects dealing with public space. At the moment, they are expanding the city centre and removing the traffic from there. Greening up the city area is crucial for an ageing population. For example, there is no space to sit for the elderly when they go for walks. The goal is to expose people to nature in order to encourage them to become empathetic towards nature and wish to protect it even more. The city plans green corridors, use of wind and solar power and other circular economy projects to subsidize and reduce the air pollution. Until 2030, information gathering is key to understand what assets we have and what is needed. Green, clean and smart is the mission!

»Public finance and spending is a challenge that nowadays should revolve around the global climate crisis when deciding on long term investments in the city infrastructure.«

Përparim Rama, Mayor of Pristina





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Mr Ivan Stanič, City of Ljubljana, and Mr Ibon Zugasti, Ljubljana Forum award winner 2022.

This year the Ljubljana Forum Award went to **Ibon Zugasti,** Managing Director at Prospektiker and Member of the Board of Directors of the Millennium Project and Node Chairman in Spain.

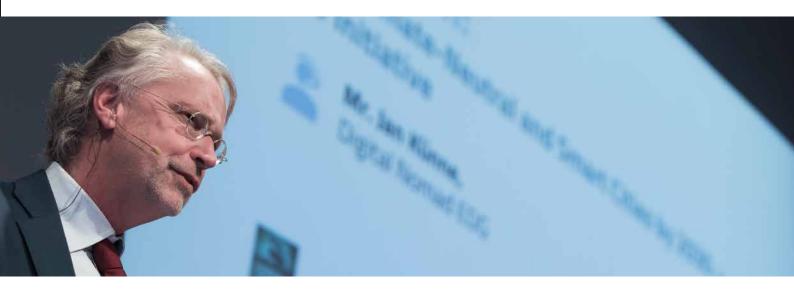


In his key note at the Ljubljana Forum 2022 he shared how to scale big opportunities in the future with strategies at the intersection of manufacturing and economic democracy. He presented his vision of Cities as a leader of the New Economy in 2030 and have received the award for his work in the field of foresight projects and global networking.

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Mr Blaž Golob, Ljubljana Forum, and Mr Fred Uduma, Slovenia-Nigeria Chamber of Commerce.

## Industry solutions for cities



Moderator of the session: Mr. Jan Künne, Senior Consultant, Enterprise Development Group

#### **T-2**

The T-2 Smart Cities and Communities platform is on the verge to leverage new challenges such as energy consumption or mobility expenses to bring better lives in cities so that the green transformation and recovery can become a reality in a smart and sustainable way. The company approached these challenges by the analysis followed by building the advanced solutions integrated into our continuously

»Only solutions that empower seamless interaction between technology and humans can lead to sustainable, inclusive and resilient development of the urban communities.«

**Mr. Gašper Žerovnik,** Head of Digital Transformations Department, T-2



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developed platform. The platform is built on scalable software architecture which allows data sources being integrated via data lake apps. Super city apps, for example, are being designed to communicate and improve residents' lives following the concept of the user-focused smart city concept. In addition to the T-2 Smart Cities and Communities platform bringing real time data to citizens' fingertips, it is also designed to engage and reward their habits in order to build more sustainable communities, better energy and waste management as well as more efficient mobility.



»Sustainable development and green business models are essential in smart cities.«

**Mr. Bojan Stojanović,** Head of EU Projects, Petrol

#### **Petrol**

Sustainable development, clean renewable energy and a lower carbon footprint are key issues in almost all cities, especially the ones investing in their future development. When planning sustainable development, the right partners are crucial. Petrol is the largest Slovenian energy company with a strong regional presence in the South-East Europe. Offering energy solutions for home and business, the company is partnering with industry,

the public sector, research centres and suppliers, helping them building a green energy future, together.

Petrol is focusing on energy efficiency, greater integration of renewable energy sources and the efficient management of infrastructure systems. They ensure efficient energy use in urban communities to generate savings and reduce carbon footprint, be it in the field of public buildings, lighting, or the urban water cycle systems. By developing new transport options, they enable different stakeholder the transition to cost-effective and sustainable mobility. Valuing their partnerships deeply, Petrol has already implemented numerous energy efficiency projects in more than 80 regional cities.



»Digitalization of key city services allows managers to optimize work processes, gives them more control of the assets, allows them to use the resources more efficiently, and helps citizens to live a better, more prosperous life.«

**Mr. Luka Brulc,** Sales Manager, Heliot Slovenia

#### **Heliot Europe**

IoT data are the currency of today for digitalizing and optimizing business and key city services of the future. At Heliot Europe they provide customers the right data for their needs with end-to-end solutions. Their main technology is Sigfox which is complementary to other IoT technologies (Bluetooth, RFID, Lora, NB-IoT, etc.) and they are an exclusive IoT Sigfox operator in countries Germany, Austria, Switzerland, Denmark, the UK, Liechtenstein, and Slovenia covering more than 440 km2 area with 3700 base stations.

Heliot specializes in working mainly with solutions on four verticals of key city services: water management, air quality

monitoring, waste management, and smart parking. First, they identify clients' challenges and determine solutions to improve business processes with the help of technology. The client can take action according to the collected data and has a visualization platform where all the data is collected, analysed, and interpreted. This way digitalization of key city services allows managers to optimize work processes, gives them more control of the assets, allows them to use the resources more efficiently, and helps citizens to live a better, more prosperous life.

#### Libelium

Libelium is working since 2006 as a technological partner for Smart City projects, its proprietary solutions enable connecting the physical and digital world to help in decision-making for city authorities. The Forum participants learned about several real case studies with quantified impacts and benefits brought by Libelium's solutions: 1) Smart Parking, 2) Air & noise monitoring, 3) Water quality & level surveillance, 4) Garden irrigation, 5) Precision agriculture.

»Ljubljana Forum sets a leading example on how IoT can become the real changer in the achievement of the new sustainability goals for cities.«

**Ms. Africa Arevalo Gomez,** International Business & Relations Executive, Libelium



Libelium is passionate about technology and is one of the leading companies in the field of Internet of Things. Africa Arevalo exposed the knowledge and capacities of the company to bring citizen-cantered technologies that will become key in the future development of sustainable and climate-neutral cities. She names examples of environmental policies that were changed on the basis of data collected by sensors and the benefits of understanding the data collected, for example the location of implementation can be determined based on data.

#### SŽ - Slovenian Railways

The investor Slovenian Railways will construct a new contemporary building of Central Bus Station Ljubljana with bus platforms, Main Hall, a resting area and retail services for passengers together with the new business premises of Slovenian Railway and a parking garage with modern parking spaces, electric charging stations and around 2,000 spaces for bicycles for passengers in underground levels along Vilharjeva street in Ljubljana on the north side of railway tracks. The new city palace as an additional attractive city centre, where passengers and citizens can meet, will be almost 200 meters long and will thus become the longest building in Ljubljana.

»The new Ljubljana Central Bus Station will be located at the heart of the new Passenger Centre Ljubljana, the broader area including also new Central Railway Station Ljubljana and Emonika, the shopping and entertainment centre, offices, hotels, and residence area.«

**Ms. Mateja Matajič,** Mobility - Projects Manager, Slovenian Railways



The main purpose of the investment is the construction of a modern bus station, which will together with the railway station form the central multimodal passenger transport hub of Slovenia, the wider region, and the city of Ljubljana. The new public passenger centre will with its variety of programs, contribute to the

establishment of a modern multimodal transfer point and enable a significant improvement in providing integrated public passenger transport. All of this will encourage the use of public transport as sustainable low-carbon transport, thereby influencing the reduction of environmental burdens and contributing to the achievement of the goals of the European Green Deal.



»Whoever holds data, has a lot of power and needs to be careful with how the data is managed.«

**Mr. Nenad Antolović,** Board Member, Smart RI

#### Smart RI

The Centre of Competence for Smart Cities is a three-year project of national importance and the largest development project in Croatia in the field of information and communication. It involves a systematic and innovative approach to urban development, management of resources, processes and services using new technologies. This improves the quality of life of citizens and visitors and enables smart decision-making and management, as well as greater efficiency in planning and

savings. Unnecessary waste of public resources and insufficient quality of public goods and services are avoided.

The CEKOM project is implementing the concept of Smart City in all areas of urban life, with the sole objective of improving the quality of life in Rijeka. CEKOM develops 36 products that improve the operation of public administration, utilities, transport infrastructure and mobility, as well as the safety of cities. In addition to the products used exclusively by decision makers such as various municipal structures and companies, CEKOM is developing numerous products that will be available to the citizens of Rijeka.



»PotHoleRaja® is keen to collaborate, invest and implement sustainable infrastructure development to make our place safe, sustainable and best in class in Europe.«

Mr. Prathaap B. Rao, Founder & Innovator, PotHoleRaja® GridMats™ Smart Roads

#### **PotHoleRaja® GridMats™ Smart Roads**

PotHoleRaja® GridMats™ is a social impact enterprise from India focused on sustainable infrastructure development using plastic waste, IoT sensors & solar pathways, expands its presence from India, SEA, MEA, Africa to now Europe.

Ljubljana forum was a great platform for the decision makers from Europe to learn and discuss with Prathap B Rao to see its direct implementation, replication opportunities, training, research and development.

The focus is to engage public, municipalities, technology, universities, and students as well as collaborate with local

organizations to make the infrastructure development like roads and surfaces eco-friendly, sustainable using plastic waste, circular economy and PPP based interventions. The PotHoleRaja® GridMats® is a patented technology implemented across multiple countries that can transform the way road and surface infrastructure is made. It is cost effective, fast, eco-friendly, technology driven, can leverage unskilled workforce, create employment opportunities and micro entrepreneurs and create a big impact to the environment with least carbon footprint.



#### Presentation of initiative Futures Business Council -FBC

by the Foresight Europe Network - FEN
/ Millennium Project / Nigeria Slovenia
Chamber of Commerce & India - Bavarian
Chamber of Commerce

The second day of the Forum has started with the business morning coffee on business development & foresight where the initiative of Futures Business Council – FBC has been presented by the Foresight Europe Network – FEN, Millennium Project, and Nigeria Slovenia Chamber of Commerce & India – Bavarian Chamber of Commerce.

## Session of the Second S





»Cities that want to remain competitive are co-creating a more sustainable future for all.

The government is fully supporting the green transformation and is starting to regulate greenwashing.«

Ms. Janja Kreitmayer Mckenzie, Secretary, Ministry of the Environment and Spatial Planning

#### **New Business Models for Cities - Circular City Governance**

Cities are very important actors in transition to a circular economy. Just as we talk about businesses and new business models for companies, we have to consider cities and new business models for cities and circular cities governance. In the future cities will have to change the way they operate, promote themselves, build infrastructure, etc. This transformation, that many cities have already started, goes hand in hand with smart cities solutions and digitalisation. But this new models, call for new approaches in financing focusing on cities and municipalities, where many sectoral policies are actually implemented.

New types of financing instruments that allow for holistic approaches are key. Cities and municipalities are excellent "ecosystems" for the transition to a circular economy, as they operate their resources (including waste), are the carriers of services for citizens, and can decide how to use public resources. These are all opportunities to introduce circular models in the field of resource management, energy, waste management, public procurement, infrastructure design, etc. Cities and municipalities are connectors of services for citizens and hence have an impact on consumption and people's behaviour, as well as on what kind of businesses to attract.

#### "Urbanscapes" as Innovation Launchpads for Moon Shot Ideas

Climate change is a global challenge. In 2050, 68% of the global population will live in cities, 80% of the global GHG emission come from cities and 75% of the electricity use is connected to cities.

»Digitalization is opening up opportunities. Hence, we need to rethink what kind of future we want to co-create!«

**Mr. Jan Künne,** Senior Consultant, Enterprise Development Group



To start and enhance innovation, cities are the obvious place. In a society of consumption, it might be interesting to enhance more green innovations, but is this the task of urban publicly funded innovation infrastructure? Not necessarily as this can be solved by cooperate innovation approaches.

Publicly funded and carefully curated innovation landscape or better "Urbanscape for innovation" should be focused on the most challenging questions for all citizens. At the same time, this is a tremendous business opportunity. The elements of this "Urbanscape for innovation" which can provide a Launchpad for moonshot ideas, has been discussed on examples of the Silicon Valley and India.

#### **Circular City Centre**

The European Investment Bank (EIB) is a European Institution and the Bank of the European Union. Their presentation focused on a brief introduction of the EIB activities in the area of sustainable and circular cities in addition to explaining the financial products. They vary depending on the nature, size and specific features of the project but value its sustainable impact.

The Circular City Centre is a competence and resource centre within the EIB, established with the support of the European Commission through the European Investment Advisory Hub to advance circular action in cities, including facilitating access to advisory and financing for circular projects. This Centre support cities in their circular transition by creating and sharing new resources and practical information to support city-level circular action, raising awareness and organising webinars on the topic, as well as providing tailored light advisory through the Circular City Advisory programme.

»The Circular City Centre initiative aims to support EU cities in their circular economy transition. The programme is free of charge but requires a high commitments from the cities.«

#### **Ms. Maria Blanco Herbosa,** Environmental Specialist - Circular Economy, European Investment Bank

»The EIB is the biggest multilateral financial institution in the world and one of the largest providers of climate finance.«

**Mr. Francesco Ferrero,** Senior Officer - Lending Adriatic Sea Department, European Investment Bank





## Session of city projects





#### Save the homes

Ms. Ana Tisov, Project Manager, Huygen

Save the Homes aims to strengthen already established frameworks for One-Stop-Shop (OSS) networks and climate targets at the City of Rotterdam in the Netherlands and the Municipality of Valencia in Spain. For these two cities, Save the Homes develops and roll-out OSSs based on the two cities specific ecosystems that streamline various stakeholder interactions, deliver an attractive renovation offer to the citizens as well as contribute towards actual upscale of home renovations. Furthermore, the project aims to help proliferate OSSs replication across EU Member States, identifying best practices and effective business models to capitalise on gained knowledge, increase energy savings and obtaining home owners' satisfaction. The two follower cities, the City of Ljubljana from Slovenia and the Sant Cugat from Spain are thus developing blueprints and implementation plans for OSSs in their cities.

## From Smart City to Smart Region via Satellite IoT

Mr. Tihomir Divjak, Consultant, GFS Institute

In order to digitize the logistics sector, develop a better common life and realize the UN Sustainable Development Goals, at the time of climate change, the COVID 19 pandemic, the hints of an energy and economic crisis in the world, the importance of implementing and using modern IoT systems in the coming period is increasing in the field of digital economy.

IoT will power the world of tomorrow and will benefit the humanity with its impact on our space and environment utilization. The limitations of communication channels of terrestrial radio systems in terms of data transmission, the long time required for construction, and the unreliability during catastrophic events show the potential importance and benefits of the Satellite IoT Connectivity for the data transfer from any assets and device. The satellite is potent due to the possibility to connect anywhere, with an appropriate digital bit stream, using rather cheap and simple equipment.



## Benchmarking the role of the Public Sector and Location Intelligence in Smart Spaces

Tomaž Lanišek, Development and Smart City Manager, City of Kranj

The diffusion of technologies has enabled many cities to transform into hubs of digital transformation, deploying urban platforms, digital twins of cities and other digital ecosystems that leverage geospatial information. Smart cities are part of a wider trend, which has a strong element of location - the Smart Space. While we witness the market for Smart Spaces expanding, we lack a deeper understanding of its challenges and the possible solutions that location intelligence might provide.

Smart Space Benchmark Framework was designed by Joint Research Centre (JRC) of the European Commission and it highlights the insight gathered from the four case studies in EU, presents an analysis

of how to improve the use of location intelligence in Smart Spaces, and provides conclusions and recommendations. Smart Mlaka project from the City of Kranj in Slovenia is one of the projects included into the EU research and recommendation. Other projects are from Rotterdam in Netherlands, Guimarães in Portugal and the project of Helsinki in Finland and Tallin in Estonia. The Digital Europe Programme (DIGITAL), including its Interoperable Europe initiative, provides plenty of opportunities to take the required actions, share the experiences, and adopt new interoperable solutions for the benefit of all. The programme will be instrumental for a rapid operationalization of the legal provisions.



#### **Center of green technologies**

**Mr. Matjaž Valant,** Dean, School of Environmental Sciences, University in Nova Gorica

The transition to a sustainable society will be demanding and long-lasting, but necessary. To contribute to the successful transition, the University of Nova Gorica and the Municipality of Nova Gorica will establish a Green Technologies Center (GTC), a central point of contact for all activities related to sustainable development and the implementation of green technologies. This will achieve long-term positive effects on the local and national economy, living standards, environmental parameters and the country's socio-political reputation.

GTC will provide infrastructural, professional, educational and administrative support for the transfer of green and sustainable innovations to industry, agriculture and the urban and natural environment. The sets of GTC activities will include: (1) technological development activity, which will be strictly applied and industrially oriented with the ultimate goal of transferring achievements to production and/or commercialization, (2) financial and technological support for innovative technological ideas, which will be supported by technological scouting and support services such as IPR, PR and project offices and (3) educational activity, which will provide experts with knowledge relevant to modern sustainable technologies.



## **Zero Waste pallets for Carbon Neutral Cities**

Mr. Matej Težak, Co-founder, ZW Slovenia

Zero waste pallets are produced in a modern private company with more than 20 years of experience. Company is located in the Czech Republic. Our products are made out of 100% residual plastic waste. Thanks to its zero-waste technology, the company uses almost 5,000 tons of plastic waste each year. All products could be easily and 100% repeatedly recycled. Broken pallets are recycled completely free of charge. In this respect ZW Slovenia is closing the loop of material flow. The company complies with

principles for circular economy and based on independent LCA study, our pallets have by 74% lower impact on environment in comparison to a wooden pallet. All pallets are certified for indirect contact with food and are therefore allowed for food industry.

As a result of its 4-year development program, they have launched our smart pallet this year together with our partner Heliot Group part of Sigfox family. Smart pallet is a revolutionary product for logistics that combines ecology and digitalization. The product brings high added value to its users and is very easy to be implemented in current IT systems of any company.

#### "GOTIVA" BADS Platform for Cities

**Ms. Nermina Čolić,** Bosnian Academic Association in Slovenia

GOTIVA project is catalysing better future for humanity through connectedness, creativity and empathy. Bosnians are placed all over the Europe and represent the biggest diaspora with 110.000 people living in Slovenia. They care about the development of a society in which understanding, equality, peace and freedom reside. They care about the soul of humanity in the future cities. They are all potential refugees in this uncertain world of ours. If we want to escape such a scenario, we have to learn from the past.



Bosnians know a few things about being refugees. Regarding that fact, Bosnians could function as binding tissue as they completely understand the importance of connectedness, creativity and empathy in obtaining a brighter future for human kind. Our humble contribution to that ultimate goal could be the emergence of GOTIVA meeting point, a hub for knowledge, experiences and stories creation directed toward a better inclusive tomorrow for all of us.



The city and public representatives, NGOs and business owners had the opportunity to be informed about industry solutions for cities, financial instruments for cities and new digitalization projects.

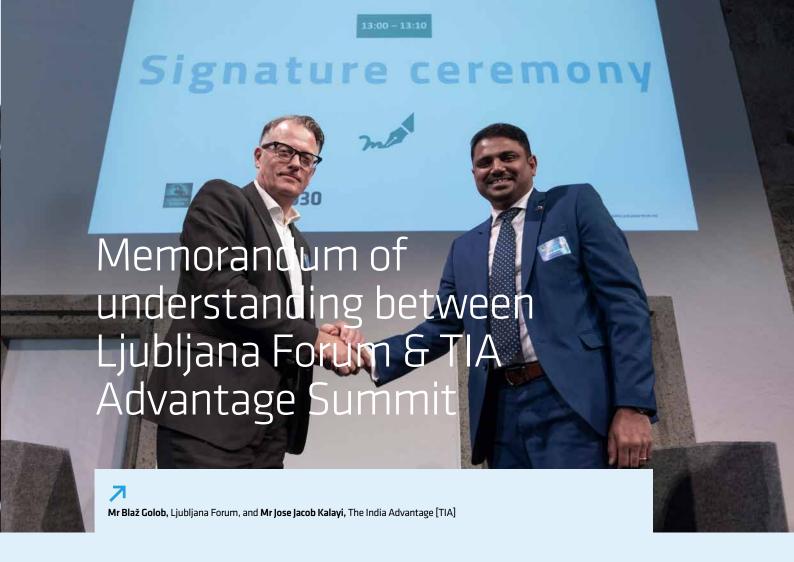


They have been included in the discussion on how technology can improve the quality of life in the cities of the future. The participants agreed that city challenges are very similar across the globe and that upskilling and upscaling is crucial in the development of the climate neutral smart cities.

The Forum concluded with the signature ceremony honouring the cooperation agreement between the Ljubljana Forum and the India Advantage Summit (TIA). This commemorates the partnership and the joint vision of building an ecosystem of enablers supporting the digitalization and the green agenda at the global level.



**H.E. Safiya Ahmad Nuhu**, Ambassador of Nigeria to Romania with concurrent accreditation to Bulgaria and Slovenia, and **Mr Fred Uduma**, President, Slovenia-Nigeria Chamber of Commerce.



The partnership aims to establish cross activities to promote each one of the events from one partner in the territories covered by the other partner, aiming to attract more public interest in their events.

To that extent, the following activities shall be part of this partnership and will be undertaken by both organizations:

- a) Announce the collaboration through their respective media communication channels;
- b) Include the partner logo on their Events promotional materials, as well as in the materials used in the Events;
- c) Each partner can organize delegations from its territory to attend the event organized by the other partner;
- d) Each partner will offer to the other partner, special registration conditions for their delegation members attending the event. The delegation organizer will have the right to charge each delegation member, a registration fee at their will, but not higher than the official announced amount for that event;
- e) Each delegation will bear its travel cost, however, if the organizing partner has an agreement providing discounts at hotels/airlines/car rentals and with any other service provider, that benefit shall be extended to the delegations attending the event;
- f) Each partner shall pay the other partner the total amount for the delegation registration fees before the event opening day; if the delegation size is more then 5 from one side to the other for a summit, the applicable registration fee will be paid before the summit.



#### City Leaders

Mr. Zoran Janković, City of Ljubljana

Mr. Tilen Klugler, Mayor of Slovenj Gradec

Mr. Saša Arsenovič, Mayor of Maribor

Ms. Anja Margetić, Deputy Mayor of Sarajevo

Mr. Marjan Junčaj, City of Podgorica

Mr. Perparim Rama, Mayor of Priština

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