



**FLYING FORWARD 2020**

**The Digital Toolbox White Paper**

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# Table of Contents

**1.1 EXECUTIVE SUMMARY .....1**

**1.2 INTRODUCTION.....2**

**1.3 PROBLEM DEFINITION.....3**

**1.4 SOLUTION: THE DIGITAL TOOLBOX .....4**

**1.5 CONCLUSION.....6**

**1.6 CALL TO ACTION.....6**

## 1.1 Executive Summary

Contemporary cities face a multitude of complex challenges across various domains, including transportation, energy, infrastructure, and environmental sustainability. With the goal of making an impact and enhancing the quality of life for cities and their residents, the Digital Toolbox has been specifically designed to address these challenges and unlock the potential for transformative change.

The Digital Toolbox empowers public administrations, including other types of organisations, in their green and digital journey by providing a comprehensive platform and expert support. It offers a user-friendly interface that enables public, as well as private, organisations to precisely identify their unique innovation needs within specific domains such as Urban Air Mobility. By leveraging its capabilities, organisations gain the ability to procure advanced technology solutions tailored to their specific challenges and adhering to interoperability and legal standards.

Designed precisely for UAM technologies (but nonetheless a tool that can be used for other advanced applications as well) the Digital Toolbox was valuable for the technical coordination of the Living Labs and technology partners of FF2020, by providing them its interoperability and legal compliance framework.

This document elaborates on Serendipity’s Digital Toolbox, highlighting its contribution and benefits for the FF2020 project as well as the potential impact it can have after the project’s end. It discusses how this tool can help (public) organisations navigate through the complexities of tackling urban challenges more effectively by facilitating the procurement and implementation of solutions like UAM.

## 1.2 Introduction

Ever heard before of the twin green and digital transition?

In case you have not, this term refers to the powerful synergy between digital technologies and carbon neutrality, leading to sustainable and environmentally friendly outcomes. The European Union has taken significant strides in promoting the twin transition through the Green Deal and the Digital Decade initiatives. The Green Deal sets legal obligations for member states and cities to achieve carbon neutrality by 2050, with interim milestones along the way. Simultaneously, the Digital Decade outlines digitalisation goals for public and private entities, ensuring fairness, transparency, and respect for human rights in the adoption of technology.

Nonetheless, this twin transition which is essential for ensuring the sustainability and well-being of our societies is not an easy task. Both public and private entities face challenges when it comes to adopting innovative sustainable solutions. Resource limitations and lack of expertise hinder them from being able to take proactive steps in these directions and upgrading their services and their sustainability by using future-proof technology solutions.

This is where the Digital Toolbox steps in! Developed by Serendipity, the Digital Toolbox is a comprehensive solution that empowers organisations to navigate the challenges of the twin transition successfully. It serves as a catalyst for change, enabling the purchasing and procurement of innovative, sustainable, and future-proof technology solutions.

By leveraging the Digital Toolbox, organisations can overcome resource constraints and streamline their processes, allowing them to make informed decisions in adopting advanced technologies. This empowers them to enhance their services, optimise internal processes, and ultimately benefit their local communities. In FF2020 the Digital Toolbox already had the opportunity to assist the Living Labs and technical partners of the project in their UAM implementation journey.

The Living Labs of this project ranged from public entities, like a municipality, to real estate companies, a hospital and a university. By using the Digital Toolbox they had the chance to map their existing digital infrastructure, identify the particular products and services necessary to apply a UAM solution and they were able to assess the latter on interoperability and compliance to EU regulations. These frameworks can ensure sustainable and cost effective solutions for the adopters of technologies that comply with them. Additionally, the technical partners of the project who provide UAM technologies were assessed on their technical specifications with the goal of enabling integrations between them and other technical components. Moreover, they were assessed on their compliance with EU laws on digital products and services to ensure minimization of risks as well as their respect for human rights.

## 1.3 Problem Definition

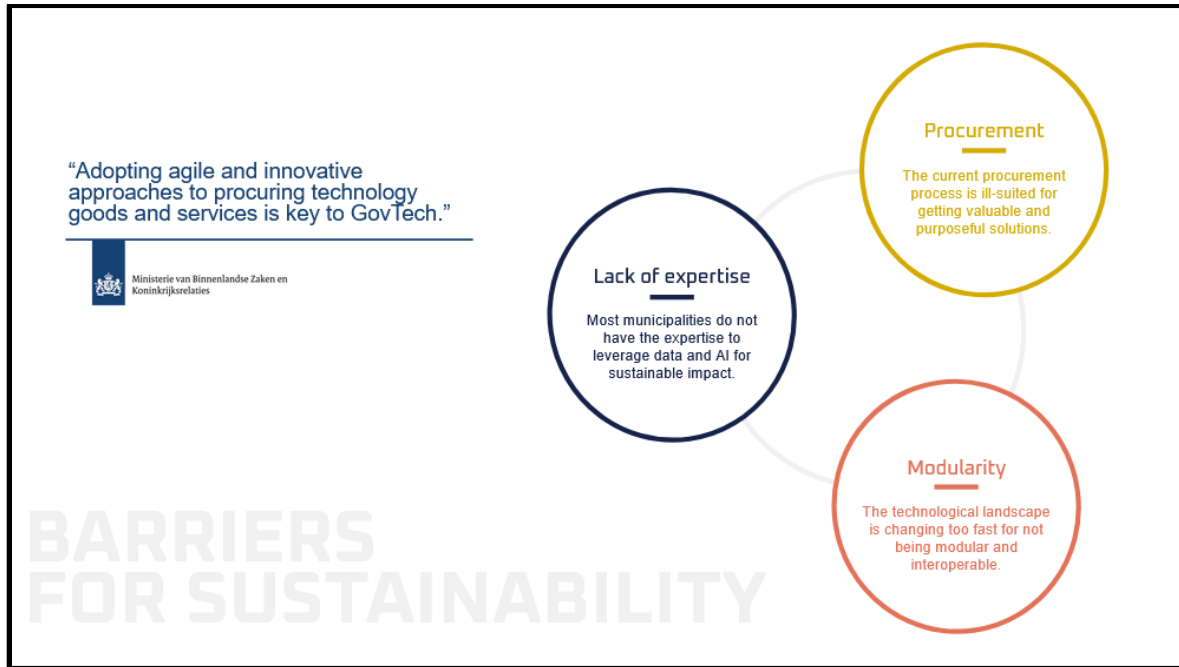
Contemporary cities are grappling with an unprecedented array of challenges. The projected increase in the global urban population, estimated to reach 70% by 2050, coupled with the impacts of climate change and energy crises, has created a host of new challenges that directly affect the quality of life in urban areas. These challenges include traffic congestion, concentrated carbon emissions, inadequate infrastructure and maintenance, energy leakage, and declining air and water quality, among others.

In the face of these challenges, innovative solutions such as Urban Air Mobility (UAM) hold immense potential. UAM can revolutionise transportation, delivery, inspection & monitoring activities by moving them to the sky; offering increased effectiveness, energy savings, space optimization, and reduced pollution and traffic on the streets.

However, the successful implementation of such an advanced technological solution faces significant barriers. Especially public but also private organisations have limited resources and must adhere to strict procedures and regulations, which makes it difficult for them to leverage innovative solutions like UAM. They lack in-house knowledge on the technologies themselves and struggle with the procurement/purchasing process for such products and services. As a result, they miss out on the opportunity to utilise the most innovative, modular, ethical and high-quality technologies that are available.

In FF2020, Living Labs had limited knowledge and capacity to identify the particular technology products needed to apply a UAM use case, set the requirements for these products to be able to integrate them with each other seamlessly; and that is exactly where the Digital Toolbox could make things easier for them!

Additionally, technology suppliers chosen by the Living Labs were often start ups and small scale companies with highly innovative ideas and products, who lack resources and do not have the ability to monitor and pursue the use of technical and legal standards, even more monitor and apply to tenders. Through the assessments on the Digital Toolbox these suppliers gained valuable knowledge and guidance on the steps they need to take to move forward in the EU market!



## 1.4 Solution: The Digital Toolbox

The Digital Toolbox addresses the precise challenges faced by public and non public organisations, empowering them to make optimal choices for citizens and their employees as well. By enabling meaningful (public) innovative procurement, it provides a solution that effectively meets existing societal needs.

The DT offers a webshop-like experience, aiming to assist organisations in adopting advanced technology solutions, such as Urban Air Mobility (UAM) services or Local Digital Twins, while simultaneously upgrading their digital infrastructure to ensure future-proofing.

How does it work?

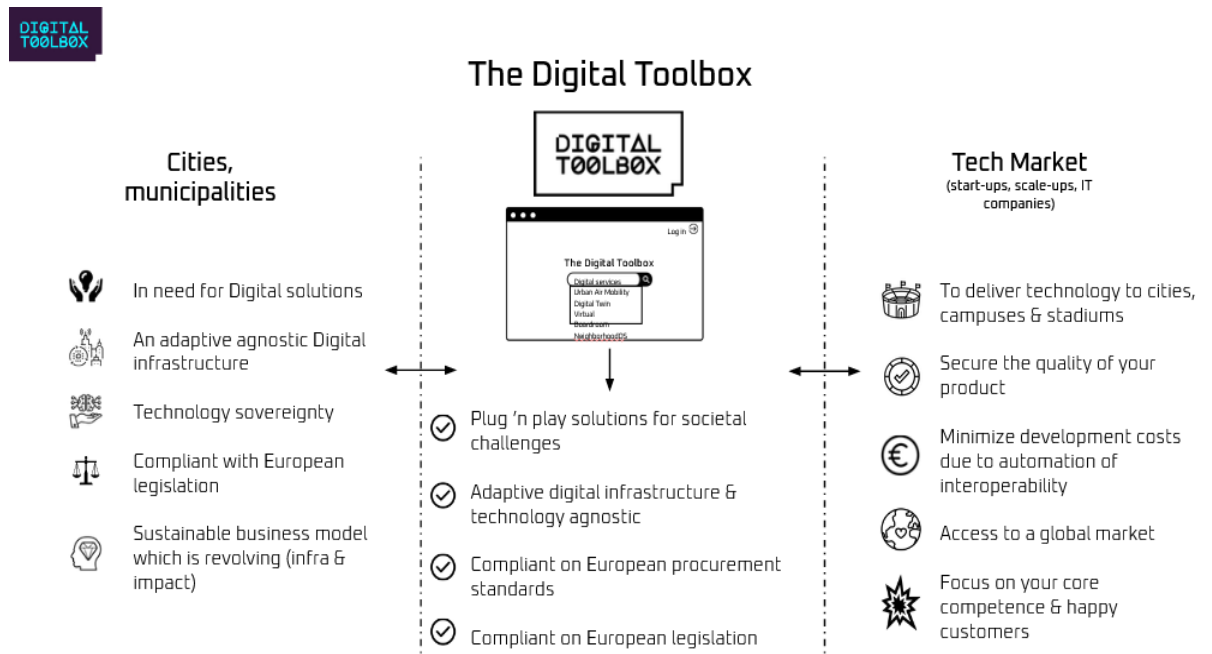
The Digital Toolbox is provided as a comprehensive ‘product as a service’ consisting of a digital platform utilised by customers and complemented by consultancy services. It establishes and supports a digital marketplace-like environment that connects entities wanting to adopt and tech companies that offer technologically advanced solutions for more sustainable cities, including Urban Air Mobility. In its customer journey, it offers a technical and legislative framework for assessing prospective technology suppliers. It evaluates them based on open standards and EU digital legislation, ensuring the interoperability of components and compliance with legal requirements concerning new technologies.

The primary objective of the Digital Toolbox is to assist organisations in their purchasing/tendering process and future management of technology solutions, helping them set the requirements for future-proof, high quality, cost effective and fair technologies!

Simultaneously, it grants innovative SMEs access to the public sector market by notifying them for tenders that relate to their products and by helping them with fulfilling the requirements for these through its informative assessment framework.

In the course of the FF2020 project, where multiple stakeholders were involved in order to implement a UAM solution, the Digital Toolbox was able to provide support in the definition of the Living Lab’s particular purchasing needs related to infrastructure, products and services. Especially where a Living Lab were a public entity, the Digital Toolbox was able to provide with standard documentation and consultation on the program of requirements of their tender as well as consulting on the technical requirements to be taken into consideration when selecting suppliers.

It also raised the awareness of the technology vendors associated with the project, as well as the technical partners, on the requirements that tech suppliers must meet to ensure continuity, interoperability, scalability, flexibility and compliance with current EU imperatives on digital products and services, ensuring respect for human rights, security and fair competition principles.



	DIGITAL TOOLBOX	Smart city platforms	Integration providers	Tender procedure	Serendipity
Short term vision (current offering)	Procurement tool			X	X
	Active market research		X		X
	Interoperability check	X	X		X
	Legal compliance check			X	X
	Supporting UX&UI	X			X
	Marketplace	X			X
Long term vision (ambitioned offering)	Digital Twin platform	X			X
	No-code solution	X	X		X
	Open platform				X
	Usability	X	X		X
	Adaptability				X

## 1.5 Conclusion

During the course of the FF2020 project and the experience acquired by testing the Digital Toolbox with the project partners, we found out that especially public organisations wanting to adopt sustainable solutions have difficulty with doing so. They encounter challenges when it comes to the awareness level on new innovations, the corresponding technical and legal framework and to managing their digital infrastructure. Innovative purchases on their side require effort and resources that they lack. What we also found out is that innovative SMEs have difficulty to get their innovation on the market, especially the public sector market; they also lack awareness on interoperability and legal compliance with EU legislations.

In FF2020 the Digital Toolbox helped the different stakeholders of the consortium, Living Labs and technical partners on acquiring knowledge on the matters that they need to take into consideration when adopting or developing a UAM solution. By using the Digital Toolbox and its consultancy services they received help with the technical requirements, governance requirements, the relevant legal framework as well as with establishing their particular digital needs taking into account their existing digital infrastructure. The Digital Toolbox was a facilitator and coordinator on the UAM FF2020 ecosystem, offering its online platform and its content, consulting and supporting in the adoption of innovative technologies, technical interoperability, EU legal digitalisation framework, and in the establishment of procurement needs and documents.

## 1.6 Call to Action

The Digital Toolbox promotes and facilitates the adoption of technology for the right causes—interoperable, ethical, innovative, purposeful, and valuable technologies that enhance the quality of life. It is designed to address the limitations especially public organisations face by



reducing long-term expenses and providing the necessary knowledge and support for technology procurement needs. It revolutionises public procurement, streamlines decision-making processes, and facilitates the implementation of innovative technologies, empowering public organisations to realise their vision of sustainable and future-ready cities as well as facilitating the access to the EU public sector market for small companies.

Are you a public organisation looking to make innovative purchases? Take action now and let us help you turn this vision into reality by acquiring the best technologies available for you and your citizens!!

Embrace the Digital Toolbox and embark on a journey toward a smarter, greener, and more prosperous future. Together, we can shape cities that thrive on innovation, sustainability, and the well-being of our communities. Trust in our expertise and our vision, and [get in touch](#) with the Serendipity team today!

Don't miss out on the opportunity to transform your organisation and make a lasting impact. Act now and join us in shaping the future of public procurement and building smarter, greener cities. Contact the Serendipity team and let's embark on this transformative journey together!



Ready?

