Deliverable

D7.2 DUET Portal v1

Project Acronym:	DUET	
Project title:	Digital Urban European Twins	
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Reviewers:	Lieven Raes (AIV) Jiri Bouchal (ISP)	
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	Confidential – only consortium members and European Commission	

Revision History

Revision	Date	Author	Organization	Description
0.1	12.02.2020	Pavel Kogut	21c	Initial content
0.2	24.02.2020	Jiri Bouchal	ISP	Review
0.3	25.02.2020	Lieven Raes	AIV	Review
0.4	26.02.2020	Ilia Christantoni	DAEM	Review
1.0	27.02.2020	Pavel Kogut	21c	Final version

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Introduction

Due to its nature, D7.2 DUET Portal v1 is officially labelled as a demonstrator in the Description of Action. For that reason, it is best viewed in its natural, online form at **digitalurbantwins.com**. In this report, the reader will only see the screenshots of different pages that make up the DUET website. Before sharing this information, we would like to say a few words about the development process i.e. how the website was built; what it aims to achieve; which web design principles were considered.

DUET portal is a gateway to the project. It will store key information and results generated during the three-year funding period. Naturally it is our ambition to have as many people as possible visit it during and after the project. We realise that having complete, up-to-date information is important but not enough. To leave a good first impression, as well as to encourage repeat visits, more needs to be done. We followed the tried and tested principles of good web design that proved successful in previous H2020 projects, namely

- *Simplicity:* We tried to avoid creating an overly complicated website with too many distracting gadgets/elements lest they direct visitors away from the main messages we want to convey about DUET. The end result is a clean and airy website which fully incorporates DUET's colour scheme: white, grey, green.
- *Ease of navigation:* In creating our website, we followed a simple three-click-rule whereby visitors should be able to find the information they need within three clicks. The homepage succinctly explains the project. The menu panel at the top provides links to specific sections if visitors want to know more about our pilots, partners or recent activities.

The platform itself was created on Wix and optimised for use on desktops, tablets and phones. The embedded responsive design, which enables automatic resizing, hiding, shrinking and enlargement, makes the DUET pages look good on any device.

The website was designed to promote interaction between users. We did not want to create a static resource where information is only heading one way: from the project to the public. So we created a place that promotes community building. Users can leave comments and follow each other. Everyone can see people's public activity, nicknames and avatars.

However, all this is possible only after the registration. Because personal information is collected in the process, users expect a secure online experience. To meet this expectation, we implemented a security protocol (HTTPS) to better protect the integrity and confidentiality of data between the user's computer and DUET's website. The security protocol provides three key layers of protection

- *Authentication:* Ensuring that only the intended users communicate with the DUET site. It protects against third party attacks and builds user trust, which translates into loyalty.
- *Data integrity:* Data cannot be modified or corrupted during the transfer. Any changes or attempts to tamper with data are immediately detected and thwarted.
- *Encryption:* The aim is to encrypt the exchanged data to keep it secure from malicious activity. This means that no one is able to "eavesdrop" on users while they are browsing the DUET website.

Now that the reader is familiar with the principles underpinning our website, we would like to show what people actually see when they visit digitalurbantwins.com. We provide a screenshot of each page along with a brief explanation.

1. Home

Home page follows a fixed scrolling pattern. The first thing users see is the DUET logo and the actual project title: Digital Urban European Twins. Written below is the mission statement - Leveraging HPC and Cloud for Better Decisions - which is displayed prominently for greater recognition.

In the 'about us' section, we describe how DUET takes the concept of smart cities to the next level by helping them become more responsive to citizen needs, real-time events and emerging trends.
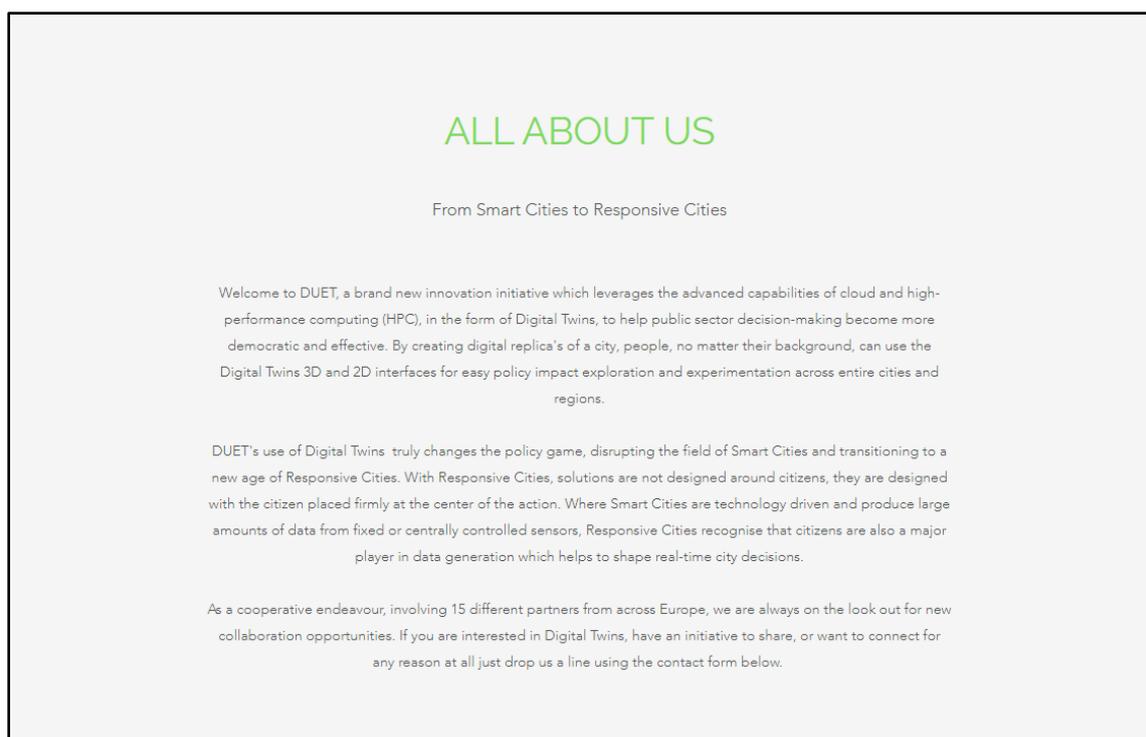
Having set the context for the project, we delve deeper into the pilot sites.

THREE CITY TEST BEDS

The three DUET city test beds cover a range of scales for testing different scenarios related to the field of mobility, health and environment. These policy domains were chosen for testing purposes due to immediate policy needs in all areas and the fact that these issues often intersect and impact each other, providing a perfect opportunity for robustly testing the Digital Twins with multidisciplinary input and multi-sectoral output.

Starting from a similar data cloud concept, three city test beds - each committed to digital transformation - have been chosen to cover different geographical scopes, spatial challenges, and policy needs and will be rolled out in a cascading order to (a) have more efficient use of resources (b) demonstrate transferability towards other cities and regions, (c) ensure lessons learned are captured and used during the project. The piloting will end with the cities using each others data/models/APIs to demonstrate interoperability and potential for Policy Ready Data-as-a-Service.

The home page gives a brief overview of the three study areas. For more information, users can click on the respective description or access through the menu panel at the top.

FLANDERS REGION

The Flanders DUET Digital Twin will concentrate on the design of new measures, implementation of actions and evaluation of the success of actions as foreseen in for example Flanders Regional Mobility Plan, and the Flanders Environment Plan20 which aims both for smoother mobility through actions that are kinder to the environment and reduces the impact on human health.

CITY OF ATHENS

Athens sees data informed decision making as a key pillar for city and business transformation. In an era of exponential and constant change, Athens wishes to embrace Digital Twin use to understand city relationships and overcome engagement barriers with stakeholders, co-create new innovative digital services and deliver new business value.

CITY OF PILSEN

The Pilsen Digital Twin will focus on the interrelation between transport and noise pollution in a 3D environment. Noise pollution in the city environment is influenced by many factors. One of the factors is the local road transport - especially the traffic volumes that pass by the built-up environment, types of vehicles and traffic conditions such as speed limits.

On the home page, the pilots are followed by the slider with upcoming events. This is a place to advertise partner's events (e.g. OASC's Connected Smart Cities & Communities Conference) and external events that DUET will or would like to attend.

Upcoming Events

Digital Twins and Technology 4.0 Summit

15 Apr, 09:00 – 16 Apr, 18:00
Berlin, Berlin, Germany

More Info

People can get in touch with DUET via the contact form. The mailbox is regularly monitored by 21C who follows up on all the submitted messages. Most communication so far has been about cooperation. Below is a recent message we received from an external person (company's and person's names were modified to conceal the sender's identity).

"Hi,

My name is Alex and I am the co-founder of Alex Company, a smart mobility company. We create digital twins of the mobility streams in cities using a combination of data and machine learning. These virtual environments then form the basis for analyzing and optimizing the mobility operations and city infrastructure. We met briefly at the Connected Smart Cities conference and I was wondering if there was perhaps potential for a collaboration since some of the projects we are working on are overlapping.

Looking forward to hearing from you!"

The footer informs the visitor that DUET has received funding from the EU Horizon 2020 Research and Innovation Programme under Grant Agreement No 870697. We also add that this website represents the views of the DUET project only.

At the very bottom is an online form through which people can subscribe to the newsletter. All the contact details are stored privately on a secure drive. Only those people who provided consent to be contacted are sent a newsletter.

2. Blog
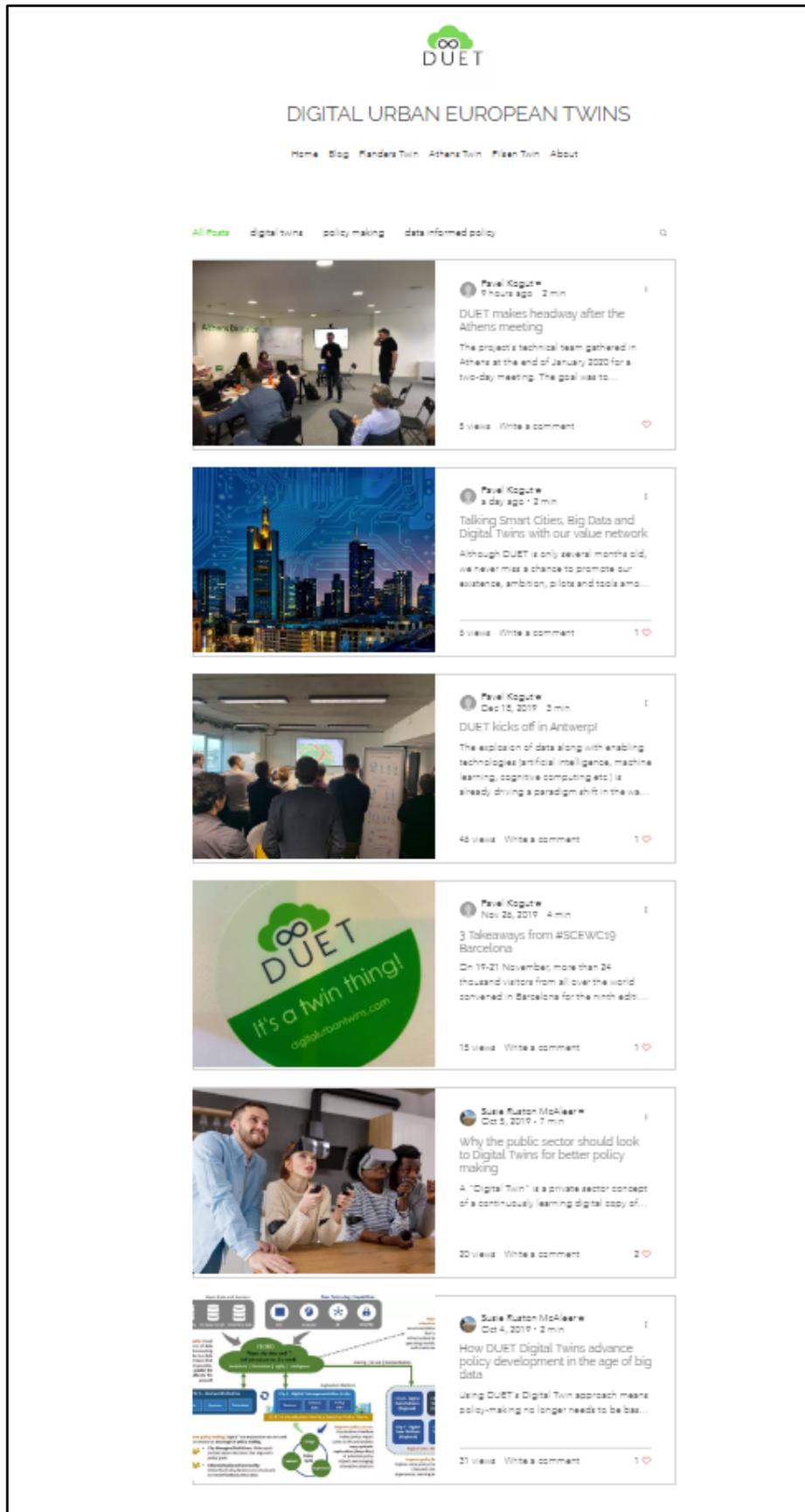
The blog section contains publications about the project. At the time of writing, five articles have been published (in reverse chronological order)

- DUET makes headway after the Athens meeting
- Talking Smart Cities, Big Data and Digital Twins with our value network
- DUET kicks off in Antwerp!
- 3 Takeaways from #SCEWC19 Barcelona
- Why the public sector should look to Digital Twins for better policy making
- How DUET Digital Twins advance policy development in the age of big data

Blogs are a great way to promote DUET, our recent achievements and forthcoming activities. This section will be regularly updated throughout the project.

3. Pilots

The pilots tab provides an expanded overview of our demonstrator sites and is cross referenced with the related section on the home page. These pages will be updated as the project develops.

3.1 Flanders Twin

The Flanders chapter introduces the reader to the needs of a Flemish region. It explains how DUET will contribute to the implementation of such policies as Flanders Regional Mobility Plan and the Flanders Environment Plan20.

3.2 Athens Twin

Covered in this chapter are the needs of our Greek pilot. The current challenge for Athens is to create an interactive pool of city data that will be dynamically updated, open, robust and usable for evidence-based decision making to enhance the Athens liveability experience for all. Hence the Athens pilot will tackle the need for an integrated Digital Twin with the capacity to merge all the city's digital sources and make it easily accessible and useful for exploration and experimentation.

3.3 Pilsen Twin

On this page we provide information about our Czech pilot. Pilsen will demonstrate the DUET Digital Twin concept across several domains - transport and mobility, urban planning, environment and wellbeing - by focusing on two related policy areas: i) Environmental Noise Directive (2002/49/EC), which recognises the need to protect quiet areas in cities and towns as sites of value to the local community, and ii) the Pilsen Sustainable Mobility Plan.

4. About

The final tab provides an overview of the DUET consortium. To make it easier for a casual visitor to understand who is who, project partners are clustered according to their role in the project.

Conclusion & Next Steps

This deliverable took the reader on a journey through the DUET website. First, it expounded on the main principles behind the look and feel. Then a snapshot of each page was provided along with a brief explanation. We did not reproduce the project website in its entirety; this was never the aim. We simply wanted to show, in writing, the structure and content of the initial version of the DUET portal. The reader is advised to experience the portal online by visiting https://www.digitalurbantwins.com/.

This deliverable concludes with a list of things we would like to implement in future updates of the website. These additions include but are not limited to

- A publications section for posting research papers about DUET
- A deliverables section for publishing all public deliverables of the project
- A separate page on DUET's digital twin concept which will explain the solution's technical architecture, its main advantages compared to other tools available on the market, the development process and, where applicable, links to the open source code
- A video collection to cover a range of user needs. There will be an explainer video that provides general information about the project; a video that captures user stories and testimonies, first and foremost from the pilot cities; an interactive walkthrough of the digital twin instances, whether prototypes or finished solution
- Capacity building material in the form of guides, FAQs, toolboxes, explainer videos etc. to enable any public authority to set up a digital twin for their city or region. The aim is to increase the uptake of digital twins in public policy making
- Support that the consortium can offer to interested parties e.g. one-on-one consultations, ad hoc group meetings, participation at DUET events, both internal and external