

ASHVIN's Newsletter #7

November 2023

Welcome to our fresh updates from the ASHVIN project!

ASHVIN's engagement in developing digital twin technologies for smarter and safer construction sites has completed 3 years 🎉

In this #7 issue, we are celebrating a triumphant three-year journey and sharing with you the latest news on our developments and activities. As we approach the culmination of our mission, we are consolidating our results and forging connections with local stakeholders. Our overarching objective remains to create a lasting impact by engaging with our end-users—the stakeholders in the construction industry.



Reflecting on our achievements:

- 🌟 Over 30 private and public entities have actively participated in our 10 Demonstrators across Europe. Currently, 13 new construction projects have embraced the vision through #WINASHVIN, and we eagerly welcome more to join.
- 🌟 ASHVIN's research impact resonates through 23 peer-reviewed publications, 80+ blog articles, and 24 public deliverables—a prove to our commitment to Open Science principles.
- 🌟 Our influence extends beyond our project as we collaborate with Cogito-project, BIM2TWIN and BIMprove sister projects.
- 🌟 We actively engage stakeholders and play a pivotal role in leading standardisation development, as we contribute to defining use cases for deploying digital twin standards.
- 🌟 We've launched campaigns, webinars and podcasts, reaching out to our community of over 2930 social media followers, sharing the benefits of digital twins.

[Learn more!](#)

**SHARING IS CARING:
OPENING THE DIGITAL TWIN PLATFORM**



We envision a digitised construction industry. **If the industry fully embraces digitalisation by 2025, it could result in significant cost savings of 13% to 21% during the design, engineering, and construction phases and 10% to 17% during operations on a global scale.** With this in mind, we are offering a chance for agents involved in the construction industry to witness the sector's future, onboarding our digital twin platform through the **#WINASHVIN** initiative. In July 2023, ASHVIN partners carried out **new site visits in three countries**, Poland, Croatia, and Spain, for the installation of sensors and measurements.

[Learn more!](#)

OUR IMPACT



A HUMAN TOUCH OF OUR ENDEAVOURS

ASHVIN project has explored digital twins resulting in technological, technical, and societal innovations. **#InnovationStories** and **#ImpactStories** showcase progress and positive impacts. Personal experiences and insights from the project team provide interesting facts about the future of digital twin applications.



CONTRIBUTING TO STANDARDISATION OF DIGITAL TWIN TECHNOLOGIES

The ASHVIN partners shared their research results on digital twin technologies for maintaining infrastructure assets with the CEN TC 442 BIM WG 9. A **report with use cases** was presented and well-received. It is expected to be published next year and will support future standardisation in the field.

RESEARCH

Scientific Conferences and Publications

We continue to disseminating our research across 23 published scientific articles in international scientific conferences and peer-review journals. Here are the latest outcomes!

Two published articles in scientific journals:

In October 2023, **the ASHVIN research was published in two outstanding journals** dedicated to construction engineering and maintenance of infrastructure:

Read about our publication on Structure and Infrastructure Engineering journal - [here!](#)

Find our about our article published on Automation in Construction journal - [here!](#)



SHINING AT THE EUROSTRUCT CONFERENCE 2023

We participated in the **Eurostruct 2023 conference in Vienna, Austria** and presented two remarkable scientific publications on maintenance based on **ASHVIN Demonstrators #1**(Bridges for high-speed railways, #3 (Airport runway) and #7 (Bridges in highway network).

One paper "**Inspection and maintenance KPIs to support decision making integrated into Digital Twin tool for infrastructure management**" proposes PIs (Performance Indicators) and KPIs (Key Performance Indicators) for the assessment and monitoring of productivity, resource efficiency, cost, health & safety during the operational life cycle stage.

The other research paper "**Measurements, Simulation, Analysis and Geolocation in a Digital Twin tool for Bridge Management,**" presented a digital twin-based tool designed for bridge management and is intended to provide bridge owners and operators with a practical and useful solution.



PRESENT AT THE EUROSTEEL CONFERENCE

The ASHVIN team attended the **10th Eurosteel Conference held in Amsterdam** and presented the scientific publication "**I-Twin. Computational twin connectors for I-profiles. Towards unforeseen interoperability of digital tools**". This paper describes the outcomes of the different methodologies and technological enablers developed within our project.

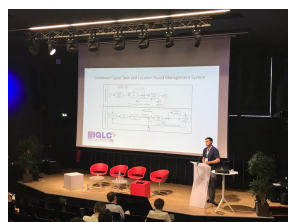


STAGED AT THE EG-ICE INTERNATIONAL CONFERENCE

We took part in the **30th EG-ICE International Conference on Intelligent Computing in Engineering virtually**. At this scientific conference focused on Sustainable, Smart and Resilient Buildings, Infrastructures and Cities, we presented the scientific paper "**Discrete Event Simulation Tool for Productive, Resource-Efficient, and Safe Construction Management**". It proposes an adaptable discrete event simulation tool for prefabricated column mounting work processes based on a discrete event system specification formalism for modelling the system, to support decision-making during project management.

ASHVIN SHOWCASED AT THE ILGC CONFERENCE

The ASHVIN team was at the **31st Annual Conference of the International Group for Lean Construction (IGLC)** in Lille, France. The scientific event is dedicated to sharing lessons learned, ideas, and findings from research and practices in the AEC sector. At the conference, we published fresh proceedings "**A Combined Digital Twin and Location-Based Management System**".





REVOLUTIONISING INFRASTRUCTURE MAINTENANCE

Many construction assets around us were built in the 70s in the last century, and they are reaching the end of their service lives, posing great challenges in maintaining their performance at the required level. ASHVIN digital twin technology contributes to managing and maintaining existing infrastructure assets. [Read our dedicated article to learn everything about our work dedicated to this phase.](#)



PIONEERING DIGITAL TWIN TECHNOLOGIES FOR CONSTRUCTION AND BUILDING PROJECTS

The European construction sector is on the verge of a digital revolution, with the ASHVIN project leading the way. The project has developed a set of toolkit tools dedicated to the construction phase, which aim to assist end-users in their work. [Read our article that delves into the capabilities of these tools, how they can be used to support construction work, and where they have already been demonstrated.](#)

SPREADING THE WORD



[Our team participated in the 5th edition of the BIMcon Summit in Romania.](#) The event is the most important annual BIM Conference, bringing experts from the world of building technologies and automation up to date with the latest news and processes implemented globally. We hosted a workshop and took this opportunity to engage with local stakeholders.

COMING UP NEXT!

In the coming months, along with the technical development, we will be working on new scientific publications in varied academic conferences and peer-reviewed journals as well as a #3 technical webinar. Also, you will meet the ASHVIN researchers team through #ResearchStories campaign and learn the results of our use cases.

Stay tuned!



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 958161. This document reflects only the author's view and that the European Commission is not responsible for any uses that may be made of the information it contains

