

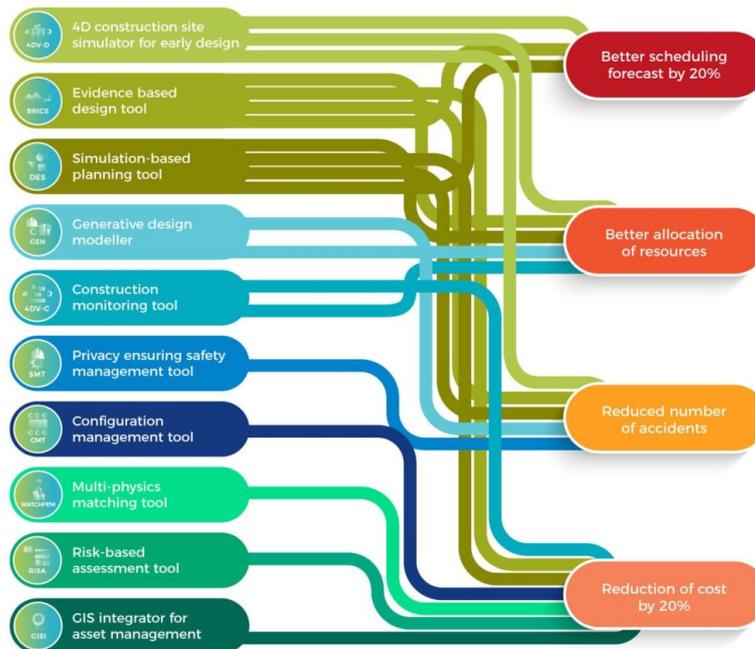


## ASHVIN's Newsletter vol. 2

December 2021

### ASHVIN Digital Toolkit: An introduction

**ASHVIN** project aims at the **digitalization of the construction industry** to increase productivity, resource efficiency, and safety. Towards this goal, digital twin technology is only one means to an end. Therefore, the core of all **ASHVIN** development aims at introducing two major process innovations enabled by the possibility to closely match as-built information with as-designed **information throughout the product development lifecycle** that is made possible by digital twin technology.



[Find out more](#)

### Find out more about our recent work!



#### ASHVIN IoT Platform: A short overview

In the context of the **ASHVIN** project, we want to establish means to collect data generated during the process of building design, production, and maintenance. To do this, we need an all-encompassing **IoT platform** able to digitally



#### ASHVIN Digital Twin toolkit

Along with the concept of the **IoT-driven digital twin platform**, **ASHVIN** introduces a **digital twin toolbox** that extends existing ICT methods and innovations from low technology readiness levels to proven technical solutions at the system or the sub-system level. All developed innovations are

persist messages in a database and, finally, filter and transform data gathered from the devices, preferably, on the very spot of data production.

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### Performance Indicators for Construction Projects: A literature review

Many companies are using **Performance Indicators** to compare their construction projects and to assess how the strategic goals of the company are fulfilled. However, the construction industry lacks objective benchmarks, or a way to measure excellence across the industry. One reason for the absence of industry benchmarks is the lack of centralized data necessary to establish standards. All contractors using digital technology to manage their construction projects are generating data and information; however, many say they lack a single place to aggregate that information and knowledge of how to use it in a meaningful way.

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### What is a Standard

In **ISO/IEC Guide 2:2004**, standardization is defined as an activity of establishing, with regard to actual or potential problems, provisions for common and repeated use, aimed at the achievement of the optimum degree of order in a given context. Important benefits of standardization are improvement of the suitability of products, processes and services for their intended purposes, prevention of barriers to trade and facilitation of technological cooperation. Standardization supports the social and economic development by ensuring safety, quality and competitiveness of products, services and processes on various levels (e.g. performance, composition, interoperability, applicability and many more).

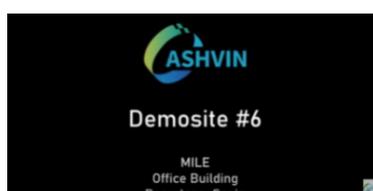
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## ASHVIN Demonstrators!



In the context of the **ASHVIN** project, **ten real life projects** across Europe from different areas of construction have been identified. Bridges, office buildings and sport stadium roof structures are only some of our fascinating pilot sites, where **ASHVIN technologies** will be implemented.

[Find out more](#)



**ASHVIN** has released its first video from out **Demonstration Sites!** Using a Lidar, it has been possible to measure the deformation of the post-tensioned slabs from the generated point clouds. These point clouds have been measured sequentially during the concreting phases, which provides added-value information on the evolutionary construction of **MILE**. With the accuracy of this cloud, existing **BIM models** can be compared with their corresponding “**As-Built**” output.

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**ASHVIN** has released its second video from out **Demonstration Sites!** This video shows the point cloud, that is the output of the 3D scanning process for demonstration site #2 Building renovation in Poland. It is a first step in development of digital twin for the building. This project will demonstrate how the **ASHVIN** innovations can support renovation activities by providing accurate digital twin information of existing building conditions as a baseline.

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## ASHVIN at Sustainable Places 2021!



**ASHVIN** joined forces with **COGITO**, **BIM2TWIN** and **BIMprove** and organized a 120-minute hybrid workshop at the **9th annual edition of Sustainable Places (SP2021)** on “**Digital Twin for the Construction Phase**“. The hybrid workshop took place on the 30<sup>th</sup> of September 2021, discussing about the challenges of creating digital twin for the construction. The workshop was chaired by **Gabor Sziebig** from **SINTEF**, who is the coordinator of **BIMprove** project, while an opening statement was made by Ms Victoria Leroy from **European Health and Digital Executive Agency (HaDEA)**.

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## ASHVIN at CIB W78 – LDAC 2021!



**ASHVIN** participated in the joint conference **CIB W78 – LDAC 2021** that took place in Luxembourg at **11-15 October 2021**. Our coordinator, **TUB**, participated in the “**Linking EU H2020 projects on digitization in the construction and maintenance industries**” workshop, together with our **H2020** sister projects **BIMprove**, **COGITO** and **BIM2TWIN** and representatives from **BIM4Ren**, **BIM-SPEED**, **BIMERR**, **BIM4EEB**, **SPHERE** and **CBIM**, where the need of aligning effort when developing ontologies has been highlighted.

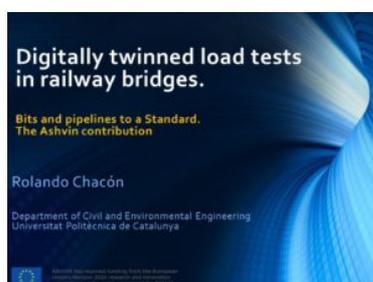
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**ASHVIN** at the “**Digital twins and integration of AI in construction industry**” webinar!



ASHVIN's Scientific Coordinator, **Rahul Tomar** from **DTT**, represented the project during the “Digital twins and integration of AI in construction industry” webinar, which took place at July 15<sup>th</sup>, 2021. The webinar was organized by the **Artificial Intelligence Research, Development and Innovation Network for Sustainable Cities** and was funded by the **Royal Academy of Engineering** under the **Frontiers Champion** award. During this webinar, the concept of digital twins and the integration of artificial intelligence in construction industry were discussed.

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#### ASHVIN at the IABMAS Technical Committee on Bridge Load Testing!

ASHVIN project participated in the **IABMAS Technical Committee on Bridge Load Testing** that took place at **Monday, 25/10/2021**. IABMAS mission is to become the premier international organization for the advancement of the state-of-the-art in the fields of bridge maintenance, safety and management. **Dr. Rolando Chacón** from **UPC** represented **ASHVIN** and shared a presentation about **Bits and pipelines to a Standard** with the **IABMAS Technical Committee on Bridge Load Testing**. The digital birth of physical bridges has been discussed from an academic, technical, economic and ethical perspective.

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#### ASHVIN at the XIII Conference on Steel and Composite Construction!

**Professor Rolando Chacón** from **Universitat Politècnica de Catalunya (UPC)** represented **ASHVIN** in the **XIII Conference on Steel and Composite Construction** that took place at **25-26 November 2021**, presenting about the potential of **BIM-enabled digital twins** for **steel structures in design, construction and maintenance**. The purpose of the conference was to disseminate the most recent innovations and achievements in the scope of this type of construction, seeking to contribute decisively to the promotion, consolidation and expansion of the sector.

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