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1 *Planning assistance for construction sites*

CONWEARDI – SMART PROCESSES IN CONSTRUCTION

In the project ConWearDi (Construction Wearables Digitization), we develop together with research partners and craftsmen a platform to enable the digitalization of services in the building industry with industry 4.0 technologies. The focus is on a tool for process planning.

The topic of digitalization is increasingly coming into focus. Construction companies in particular, which tend to be small or medium-sized enterprises, are still lagging far behind in the digital change. If you want to remain competitive in the future, you have to face digitalization and take advantage of opportunities that arise.

This is where ConWearDi comes in: The aim is to develop a web platform that enables the digital exchange of information between all those involved in construction. Building on this, services are developed to support the planning and implementation of construction site processes.

Web platform

The platform connects (software) tools of different kinds. Examples are ERP systems, planning tools or machines and materials equipped with sensors. Wearables are also used, e.g. smart glasses, which record and process information in real time. As part of the project, we develop an application for process planning that is specially adapted to construction site processes and connected to the platform.

Construction site planning under uncertainty

The adherence to schedules across several construction projects is often only possible through a precise division of the work packages and an optimal use of the available resources. Changes in the course of the project (e.g. absence of employees) make it difficult for the planner to maintain an overview. In ConWearDi we develop models and algorithms that support the site planner in his tasks. An adequate consideration of the uncertainty of planning-relevant information plays an important role. For example, in many cases the feasibility of operations depends on the weather. In these cases, simulations help to develop suitable evasion strategies.

GEFÖRDERT VOM



With the help of the resulting software, work packages can be automatically scheduled and optimized with regard to various goals. However, the final decision remains with the planner, who can interactively adapt the created plans (e.g. drag & drop) and is directly informed about the consequences of his decisions.