TOP TEN

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Digital Twins for Railway Training

Digital twins for training in railway technology provide a solution to the challenges of on-site training in confined space situations with larger groups and changing learning situations. It allows trainees to explore a training object in a virtual tour consisting of high-resolution 360 images and to interact with all operating elements. The special feature of the digital twin is the fact that it reflects the real condition and state of the training object and enables the trainees to easily transfer the digitally learned operations into the real environment. All steps that must be performed in a real setting can be carried out realistically within the digital twin and can be tested under safe conditions. In addition, a digital twin contains all training content context-sensitively referenced, such as training documents, 3D animations, sectional drawings, training videos, and much more. In this way, trainees can be offered a training interface that contains all the content of the corresponding training object. At the same time, it can also be used by trainers in the classroom. The interactivity allows exercises and exams to be carried out within the digital twin, enabling trainees to prepare extensively for on-site training. This can save a large part of the time required for on-site training, as the trainees are already familiar with the training object and can orient themselves independently. Steps that have already been learned only need to be tested on the real object. Digital twins therefore offer an effective addition to on-site training.