

FACILITIES AND MAINTENANCE

SPRINKLER TEST

PERFORMANCE AND TRAINING

In collaboration with DAQRI, BAM built an Augmented Reality (AR) App for DAQRI Smart Glasses® that improved accuracy and reduced errors during a fifty-nine step Sprinkler Test procedure by overlaying 3D work instructions and images onto the physical components, in real-time.



Improved performance with AR work instructions



Fewer missed steps



3D Visuals for all 59 steps overlaid onto the real world



More confidence, greater consistency



Greater than 90% accuracy for experts and novices alike

“The AR app will ensure I do all the steps. You have to do the procedure by protocol, if you do it another way it is easy to miss some steps.”

-Franz
Experienced Sprinkler Service Engineer





CHALLENGE

Sprinkler Installation is a key component of fire suppression systems in large buildings, often mandated by law to be inspected and tested every two weeks. At a particular hospital in Europe, Service Engineers perform this “Sprinkler Test” fortnightly; a fifty-nine step procedure that involves pressing and turning various switches and rotating multiple valves. Current methods require service engineers to perform this test from memory. Given that fifty-nine steps are required, making mistakes or overlooking key steps is highly likely, and results in activation of the hospital alarm.

Currently, the order in which the fifty-nine steps are performed has not been standardized, thus individual service engineers complete the steps in unique sequences. This inconsistency can impact new service engineers during onboarding. Specifically, many new hires experience increased difficulty and confusion as a consequence of receiving training from multiple service engineers who approach inspection differently. Furthermore, current methods lack any documentation detailing a complete and consistent inspection process for the required procedure. This can result in regularly missed steps, mistakes made unbeknownst to facility management, and incorrect procedures passed down to new service engineer trainees.

SOLUTION

DAQRI went onsite to the BAM-managed hospital facility near Amsterdam (in Zaandam), The Netherlands. All participants – a mixture of experienced service engineers and novices who had never previously performed the task – first received instruction on how to use the BAM AR App, with the exception of a “baseline” participant who completed the Sprinkler Test procedure without wearing DAQRI Smart Glasses. Participants then put on DAQRI Smart Glasses and went through the fifty-nine steps of the Sprinkler Test in a linear order guided by the BAM AR app. In the case of the baseline, the test subject performed all fifty-nine steps from memory. Participants performed this procedure on the real Sprinkler Installation, with three participants completing a live test (i.e., followed work instructions and physically turned valves / pressed switches on the Sprinkler Installation) and four completing a dry test (identical to the live test but minus physically turning valves/pressing switches). Key Performance indicators (KPI’s) included “accuracy,” in terms of the correct procedure being performed at each step, “task completion,” defined as a lack of missed steps, the participant’s “confidence” that they’d completed the Sprinkler Test procedure correctly, and the “usability” and “social acceptance” of the BAM AR app.

RESULTS

Users exhibited improved performance completing the inspection using the BAM AR app on DAQRI Smart Glasses compared to the current method, which is demonstrated by fewer missed steps and a greater consistency in performance of the Sprinkler Test procedure. Users also maintained a high level of accuracy (>90%) in task performance and were generally very confident that they’d completed the Sprinkler Test procedure correctly when guided by the BAM AR app. The BAM AR App was generally perceived as useful by experienced and novice users, easy to use by all participants, and participants would recommend an App like this to a colleague, showing that the App has strong social influence (i.e., acceptance).

ABOUT DAQRI

DAQRI, the leader in Professional Grade AR™, enables modern organizations with a complete AR platform. DAQRI Smart Glasses™ and the DAQRI Visual Operating System™ (VoS) bring digital and 3D content into the real world to accelerate innovation, communication, and productivity. From the field to the factory floor, DAQRI customers are improving workplace efficiency, safety, and their bottom line. To learn more, please visit daqri.com.

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Interested in requesting a demo or learning more about how your company can use augmented reality? Visit www.daqri.com and our Sales Team will get in touch.