EN 50271 Certification for Portable Multi-Gas Detectors

Success Story

Client

Our client is one of the pioneers in leak detection be it water or gas. Having an experience of over a century in the field of water and gas leak detection, combined with the most advanced technology, our client is a market leader in gas and water detection instruments, specifically the multi-gas monitors.

Problem Statement and Challenges

Our client contacted Powersoft19 SQA to help them achieve EN 50271 certification. The series of multi-gas detectors was available in the market with millions of units already sold worldwide. The main task was to bring about the software to meet the requirements as set out in EN 50271:2010 standard with minimal set of changes. At the same time, we were given the job of generating the necessary documentation to achieve EN 50271 certification from DEKRA Exam.

The biggest challenge here was that the certification agency had not specified any list of documents that they were looking for. Also the changes in the software were to be restricted to a minimum so that the instrument performance, experienced by the end users, was not compromised. Moreover, certification agency demanded detailed test reports to ensure that extensive testing was carried out on the instruments.

Solution Strategy

We tackled this project by dividing the project into three main phases.

The first phase was the scope definition in which we defined the deliverables for the project. We designated the second phase as the testing phase in which we tested the gas monitors comprehensively. The last phase was reserved for certification in which we prepared a complete documentation package for submission to DEKRA Exam for assessment.

In the first phase, we defined the project scope and the list of deliverables that we would present to the safety certification agency. We reviewed the requirements as set out in EN 50271 standard and performed a gap analysis to identify areas where the gas monitors fell short. Using our past experience in safety certifications, we referred back and forth to the parent standard IEC 61508 and extracted the requirements that were needed to be updated in the instrument software. Subsequently, we prepared a complete list of requirements that required validation for EN 50271 certification. To make sure we were on the right track, we put together a list of documents that we thought would be sufficient for certification. We had DEKRA Exam review this list and got a green light straight away.

Furthermore in this phase, we prepared plan documents that included the Software Quality Assurance Plan including all the processes and procedures to be followed as per requirements of the certification standard. Verification and Validation plans were prepared next to direct the verification and validation activities on gas detectors.

The second phase involved the actual testing of the instruments. We performed functional testing based on the functional test cases written according to safety standard criteria. These included the boundary values analysis and performance tests. Simultaneously, we carried out static code analysis on the instrument's software to ensure that software adhered to the restrictions EN 50271 enforces. At this stage, we were in constant contact with our client to ensure that the resulting changes in the instrument software were localized and were not affecting the instrument performance in any way. We prepared comprehensive test reports to document all the testing activities.

The last phase was the finalization of the documentation as specified in the first phase. We prepared a comprehensive validation report that showed the verification and validation of all the safety requirements of EN 50271 as per the verification and validation plans drafted in the first phase. Subsequently, we packaged all the documentation into a structured form as demanded by the certification agency and submitted this package to DEKRA Exam for evaluation.

Ultimately, our clients were awarded with the EN 50271 certification compliance certificate without any further iteration.

Highlights

To summarize, these were the key highlights for this project:

» Getting approval for a list of deliverables for EN 50271 certification
» Preparing test cases and corresponding test reports verifying the functional behavior of the gas monitors
» Drafting V&V plans and reports validating the safety requirements
» Receiving EN 50271 certification without any iteration from DEKRA Exam

Outcomes

This project provided us with a valuable experience of working with one of the world's leading certification agencies and proved to be a big stepping stone in expansion of our portfolio. Our name spread out further and we got clients from areas of the world we had not imagined before.

Contact Us

Explore ways to use our expertise in growing your business while establishing a valuable partnership with us.

Contact our consultants at:

E-mail: sqa@powersoft19.com
Website: www.powersoft19.com/sqa