



## What's new in the SuperTest Vermeer Release

### SuperTest Vermeer Release

The team of Solid Sands has chosen the Dutch Painter Johannes Vermeer. Johannes Vermeer is known for his photorealistic attention to detail using pigments such as lapis lazuli to create a world more perfect than the real one. It is still a mystery how he was able to achieve the masterly treatment of light and color in his work, since the appreciation of his paintings came only two centuries after his death. SuperTest aims to attain the same perfection as Vermeer, but without the mystery – with each test hand-crafted to demonstrate exactly what aspect of C or C++ is verified.



### Correctness-testing of optimizing compilers

The optimization behavior of C compilers is not defined in the C language standards, which makes validation of optimizing compilers challenging, especially when they change the control flow of source code. To meet the rigorous validation requirements of functional safety standards such as those in the automotive and railway industries, the new SuperTest Vermeer release features a rigid framework of tests designed specifically to meet the unique requirements of code optimization. Leveraging Solid Sands' years of experience in testing optimizing compilers, these tests not only trigger optimizations but also exercise them with a comprehensive set of input parameters designed to exercise them to their limits in terms of critical characteristics such as code coverage. Coupled with SuperTest's ability to run directly on target hardware, this new SuperTest feature significantly enhances the confidence of compiler developers and users in exploiting the advantages of code optimization in terms of lower-cost target hardware, less heat dissipation, a more compact build and a reduction in system power consumption.



### Run SuperTest on 'bare-metal' systems

One of the strengths of SuperTest has always been its ability to run directly on target hardware, but without the benefits of an operating system this has not always been easy. The new SuperTest Vermeer release solves the problem by including a library of dedicated freestanding environment tests that run in as little as 4 Kbytes of on-chip memory without the need for an OS or I/O subsystem. All that users need to do is connect their computer to a target hardware development board and download and run the compiled test code.

This release also adds C++17 language testing to SuperTest's existing C++ support, putting SuperTest ahead of the curve in terms of language evolution, while its extended requirements traceability feature now includes support for C90, C99, C11, C++03, C++11 and C++14. In addition, users running SuperTest in a Windows environment will now be able to exploit multiple processors to speed up compiler testing and enhance their productivity.

