

# The Future of Coding for Safety-Critical Systems



**The Future of Coding for Safety-Critical Systems Seminar aimed to provide insights into the future of coding for safety systems: what languages, techniques and methodologies are likely to be used, what coding standards and guidelines may be applicable and how verification and analysis might be integrated with the process of developing code. Dewi Daniels provides the highlights from this fascinating event.**

The SCSC held a seminar on “The Future of Coding for Safety-Critical Systems” on Thursday, 9<sup>th</sup> June 2022. This was a blended event, held in-person at the Wellcome Collection, Euston Road, London and online via Zoom. This was the second SCSC seminar to be held at the Wellcome Collection, which was a lovely venue that was a very short walk from Euston Square underground station.





Les showed that there are emergent and apparently inevitable properties of all discrete systems, from the length of words in books, the distribution of wealth, the length of proteins and the length of subprograms in software programs. Whatever programming language you choose and whatever your program does, your system as a whole is overwhelmingly likely to share the same emergent properties, safety-critical or not.

Since his talk, Les has published an excellent book [5] on this topic, which is available as a paperback or for the Kindle. I have read the book and highly recommend it.

## Where To Find Out More

More details of the event, including videos of the presentations and copies of the presentation slides, can be found on the SCSC website at [Seminar: The Future of Coding for Safety-Critical Systems \(scsc.uk\)](https://www.scsc.uk/2022/07/22/seminar-the-future-of-coding-for-safety-critical-systems/) [4]

## References

[1] Apple's SSL/TLS bug (22 Feb 2014), <https://www.imperialviolet.org/2014/02/22/applebug.html>, retrieved 28 July 2022.

[2] The Embedded Rust book <https://docs.rust-embedded.org/book/>, retrieved 28 July 2022.

[3] Daniels & Tudor, Software Reliability and the Misuse of Statistics, SCSS Journal, Vol. 1, No. 1, [Software Reliability and the Misuse of Statistics \(scsc.uk\)](https://www.scsc.uk/2022/06/28/software-reliability-and-the-misuse-of-statistics/), retrieved 28 June 2022.

[4] Seminar: The Future of Coding for Safety Critical Systems <https://scsc.uk/e912>

[5] Exposing Nature's Bias: The Hidden Clockwork Behind Society, Life and the Universe, Les Hatton and Greg Warr, Bluespear Publishing, 10 June 2022, ISBN 978-1908422040

## Dewi Daniels, Software Safety Limited

Dewi is a highly experienced software engineer specialising in the development and verification of safety-critical and other kinds of high-integrity software. He has worked on programmes ranging from civil airliners such as Airbus A380 and Boeing 787 to personal air vehicles, air taxis and unmanned air systems.