# Editorial to the 2023 Summer Issue

Welcome to the second issue of the second volume of the Safety-Critical Systems eJournal, which is published by the Safety-Critical Systems Club (SCSC). This issue contains three papers:

- Rob Ashmore, Mark Hadley and James Sharp (UK), address "*Reducing the Risk of a Software Common Mode Failure*". They provide examples showing that this is not just a theoretical risk and review some previous research, extant standards, and how the problem has been addressed in real-world systems. They conclude that there is no preferred way of protecting against common mode failure in software-based systems and therefore propose a set of criteria that can be used to assess the protections that have been implemented within a system design.
- Derek Fowler and Alasdair Graebner (UK) build upon Derek's paper in the last issue of Volume 1, on using IEC61508 in the Transport Sector, by providing another worked example, "*An IEC 61508 Viewpoint on the Safety Assessment of Railway Control Systems*". The example considers moving-block Automatic Train Control for a hypothetical underground railway system.
- Malcolm Jones (UK) is "*Chasing the Black Swan*". There may be an 'as yet' undiscovered flaw or lack of understanding in the design of a product, process or facility that could lead to a catastrophic event. How should one continue to search for such a possible flaw with a view to subsequent removal or mitigation — when is 'enough-enough'?

My thanks go to the authors for contributing their papers, and also to the anonymous peer-reviewers (at least three per paper) for suggesting improvements. Apologies also to those reviewers who made some recommendations that were not taken up.

No letters have been received for publication in this issue, but there has been correspondence. An author (not in this issue) and a couple of reviewers independently said that they thought that the referencing of standards, in particular IEC61508, would be clearer were we to follow the recommendations of the standardisation body, rather than the Harvard method we have been using. This issue contains two papers that reference IEC61508, and they do it differently. Derek's paper is the third in a series and so has been kept consistent with its predecessors. I will do a review of referencing and update the Author Guidelines (to be found in the paper template) accordingly.

Previous editorials have said that the next volume of the Safety-Critical Systems eJournal will start with a themed issue. This has been put back a month so that the themed issue will be the second of the year, published to coincide with the Safety-Critical Systems Symposium, SSS'24. The theme is the technologies underpinning autonomous vehicles and how we assure them. Note that this theme is broad — for example "technologies", as well as vision processing, machine learning, etc., can include things like concepts of operation, regulation, standards, ownership of liability, and so on.

Finally a reminder that this year's cover image is to highlight the Systems Approach to Safety of the Environment Working Group, which aims to produce clear guidance on how engineered systems should be developed and managed throughout their entire lifecycle so as to preserve, protect and enhance the environment. If you would like to join, or find out more about this group, please go to their page on the SCSC website: https://scsc.uk/ge

John Spriggs, SCSC Journal Editor
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