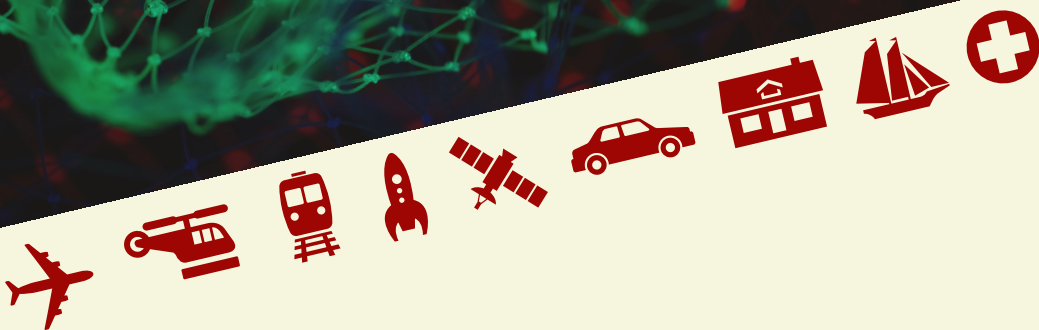


Data Safety Assurance

The Emerging Challenge



^a
***Could your data become the
cause of an accident?***

Modern systems use data to make safety-critical decisions. Errors in, or incorrect use of such data, can cause harm to life and the environment. Ensuring the safe use of data is a complex challenge for all industries.

The risks from data will only increase as our systems become more inter-connected, autonomous, and increasingly use data-intensive technologies, such as Artificial Intelligence, Internet of Things, and Machine Learning.



The Problem...



Accidents are happening

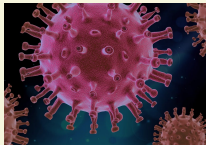
There have been many accidents and incidents where data, as distinct from purely software and hardware, has been the major cause. For example:



2023 - Police data leaks

20,000 police officers' details "potentially at risk"

Data breach at a supplier



2020 - Covid-19 test results silently deleted by Excel

Importing Covid-19 test results in loss of 16000 records

Excel truncated the data after 65536 records



2018/19 - Boeing 737 MAX

Lion Air Flight 610, 189 lives lost

Ethiopian Airlines Flight 302, 157 lives lost



No redundancy of angle of attack sensor, inadequate training materials, missing in-service problem reporting



2017 - Irish Search and Rescue Helicopter

Lost with all crew

Incorrect map data used



2017 - Cambrian Line

Risk to pedestrians and track-side workers

Speed restriction data not available to drivers

Data not re-loaded after system reset



2017 - Russian Soyuz-2-1b Fregat-M Rocket

Rocket and satellites destroyed

Incorrect launch site coordinates used

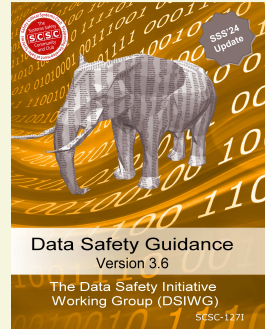


The Solution...

The SCSC Data Safety Guidance

The *Data Safety Initiative Working Group (DSIWG)* of the *Safety Critical Systems Club (SCSC)* have published the “Data Safety Guidance” (scsc.uk/scsc-1271) to address this problem.

The guidance captures best practice and describes a Data Safety Management Process, which can be integrated into an overall Safety Management System.



The RADISH Tool



RADISH (the Risk Assessor for Data Integrity and Safety Hazards) is a software tool being developed by *Mission Critical Applications Limited*, to assist a data safety practitioner developing a data safety case using the guidance.

We have received grant funding from the *Lloyd's Register Foundation* and *Innovate UK*, to develop the RADISH tool. A free to use version of the tool is available for study, training and evaluation purposes. For use on real projects, we are developing an enhanced licensed version.



We are interested in hearing from user organisations who could benefit from the use and further development of the tool. Several levels of participation are possible, such as provision of test data or use case scenarios, and beta testing. Training workshops can be arranged to support this.

For more information, and access to the RADISH tool, please email radish@mca-ltd.com.





Would you like to:

Assess your organisation's exposure to data risks?

Reduce the risk of your data causing harm?

Assure the safety of your data assets?

Receive training in carrying out data safety analysis?

Have a demonstration of the Data Safety tool RADISH?

Use the RADISH tool?

Influence the customisation of RADISH for your sector?

If so, we would like to hear from you!



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