

SCSC Data Safety Initiative – WG Meeting 75

21st March 2023, Zoom

Minutes

Attendees

Mike Parsons (MP) – AAIP, Tim Rowe (TR) – Consultant, Richard Garrett (RG) – SQEP, Paolo Giuliani (PG) – Atkins, Roland Rosier (RR) – TomTom, Mark Templeton (MT) – Qinetiq, Michael Green (MG) – Ecomergy, Oscar Slotosch (OS) – Validas, Rhiannon Chilton (RC) – DSTL.

Apologies

George Currums (GC) – Jacobs, Daniel Clegg (DC) – BAE Systems, Dave Murray (DM) – BAE Systems, Divya Atkins (DA) – MCA, Martin Atkins (MA) – MCA, Mitali Atkins (MiA) – MCA, Andy Williams (AW) – Consultant, Graham Sutherland (GS) – Consultant, Frank Turbide (FT) – Public Safety Canada, John Bragg (JB) – MBDA, Dave Banham (DB) – Blackberry, Jennifer Kracht (JK) – TomTom.

Agenda

1. Welcome
2. Spanish Trains
3. SSS Feedback
4. IEC 61508 Interest
5. ISO 25000
6. Reminder New Guidance 3.5
7. New Data Risk Types – Update
8. Clinical Data Safety Webinars
9. DSITN (Data Safety in the News)
10. Update on Tooling
11. Actions
12. Next meeting
13. AOB

NOTE: All comments or opinions in these notes are attributed only to individual attendees of the meeting, not to their respective organisations.

*[Note that actions are presented in the form **N.Mx** where **N** is the meeting number, **M** a reference number for the action raised in that meeting and **x** is an optional letter that differentiates related actions arising from the same discussion point].*

The meeting slides are available at: https://scsc.uk/file/gd/75th_DSIWG_Slides_v1-1545.pptx

1. Welcome

MP opened the meeting and welcomed those attending.

2. Spanish Trains

MP mentioned the recently reported issue of the Spanish trains which were ordered to the incorrect specification for legacy infrastructure: <https://eandt.theiet.org/content/articles/2023/02/spain-spends-258m-in-trains-that-dont-fit-through-its-tunnels/>

It was noted that there was a specification issues with trains designed to operate across both France and Germany, and also the tilting trains in the UK also apparently had a problem with tunnels.

3. SSS Feedback

It was thought that SSS'23 went well, <https://scsc.uk/e898desc> and that data had a strong showing at the symposium with the following:

- i The new version of the guidance (v3.5) issued, <https://scsc.uk/scsc-127H>
- ii A demo of the data safety tool given by MA and DA
- iii A poster explaining the work of the group prepared by MiA
- iv A presentation on the new data risk types given by PH and MP

All resources are accessible via <https://scsc.uk/e898prog>

4. IEC 61508 Interest

MP explained that he had received an email from Phil Williams of the SCSC Steering Group about including more data aspects in the new version of IEC 61508. This was discussed in the WG and generally thought to be a good idea, as IEC 61508 is very influential. Some possible approaches were mentioned. MT agreed to produce a short presentation on what could be done by 3rd April.

Action 75.1 (MT) – Produce a short presentation on approach to updating IEC 61508 to include data safety aspects

RR mentioned in the chat: *"I don't know if it is of any help for adding examples into IEC 61508, but in IEC 61508-2 (2010), section 7.4.11.2, it gives an example of using a "black channel" to transmit safety-critical data over a non-safety-critical system."*

5. ISO 25000

MP received an email from DB mentioning ISO 25000 *"The series of standards ISO/IEC 25000, also known as SQuaRE (System and Software Quality Requirements and Evaluation), has the goal of creating a framework for the evaluation of software product quality."*, and ISO 25012 *"ISO/IEC 25012 - Data Quality model: defines a general data quality model for data retained in a structured format within a computer system. It focuses on the quality of the data as part of a computer system and defines quality characteristics for target data used by humans and systems."*, <https://iso25000.com/index.php/en/>

ISO 25012 which has a software and data quality model. Some of the data characteristics look very similar to those in our guidance. It was thought that it might be useful to compare this standard to our guidance.

Action 75.2 (TR) – See if access to the ISO 25000 standards can be obtained through the IEE / IET and, if so, have a quick look at how it related to our guidance.

6. Reminder New Guidance Version v3.5

MT ran through the changes implemented in version 3.5 of the guidance, <https://scsc.uk/scsc-127H>

1. Collection of accidents enhanced: New subsection H.2: What3Words. Several issues are discussed, experienced by mountain rescue services and others. The earliest known data safety incident (Gemini V missed landing spot, https://en.wikipedia.org/wiki/Gemini_5) has also been added.
2. Ease of use of the guidance document as a reference book has been improved by the addition of two indexes: Locations around the world mentioned in the document and a general index to the document to provide easier access to specific topics.
3. The description of Aliasing in subsection 6.2.2 has been enhanced by a description of recent issues with homophones.
4. New properties of Analysability and Explainability added to list of data properties.
5. Subsection K.3.3 of Appendix K has been updated to address “survivorship bias”
6. New Appendix M to present the concepts of Black Swan, Dragon King, Perfect Storm and Pudding Lane data.
7. New Appendix N to propose considerations for the assurance and qualification of data-handling tools.
8. New Appendix O to present some of the issues that may arise when migrating, importing or exporting data.
9. Many of the references presented in Appendix S have been enhanced.
10. A link to the third data seminar has been added to Appendix T
11. Many minor updates including re-phrasing and spelling mistakes

Action 75.3 (MT) - Fix the minor typos that have been reported with v3.5 and prepare updates for both the online version and also the KDP/Amazon hardcopy.

MT suggested that the priorities for the coming year regarding the guidance should be:

- Cover more of the data categories (only a small number are covered so far)
- Include other assumed architectures, for instance data processing chains

7. New Data Risk Types – Update

PH and MP presented the new data risk types at SSS, <https://scsc.uk/re898.72:1>

MP then went through the current list of types, https://scsc.uk/file/gd/Dead_Data_Types_v4.4-1544.docx and explained that help is needed to transform these into a workable hierarchy or ontology. PH has made a good start but more needs to be done.

8. Clinical Data Safety Webinars

MP mentioned the free webinars looking at the issues of clinical data safety <https://scsc.uk/e1000> jointly organised by the NHS, MCA Ltd and the SCSC. He said that bookings are looking very good.

MG noted that data encoding is often different across clinical systems in different trusts in the NHS and so there is a risk of a data item being mis-translated (or lost) between systems. MP mentioned that this was an example in the data risk types presentation mentioned in section 7 above.

9. Data Safety in the News (DSITN)

No specific items.

10. Update on Tooling

OS was thanked for his new section in the guidance on tool qualification. No update from MCA Ltd.

11. Actions

See table at end.

12. AOB

MP thought it might be a good challenge for the system safety community at large to see if they can find an earlier documented data safety error than Gemini V in 1965.

Action 75.4 (MP) – Create a challenge to find the earliest documented data safety error

13. Next Meeting

Next meeting will be held on May 4th 2023 in CGI Reading Green Park. Thanks to PH for arranging.

14. Thanks

Thanks to MP for taking the minutes and chairing.

Summary of Open Actions

Actions greyed out are considered closed and will be removed from the list at next issue.

Ref	Owner	Description	Target Guidance Version
42.9	MP	Work out a matrix of data categories (previously 'types') and data properties (as per DB discussion)	N/A
43.4	MP	Write up a data focussed FMEA approach.	4.0
44.2	MP	To discuss with AK on how to get the Wikipedia article published	N/A
46.1	MP	Review the application of DSALs to higher level forms of aggregation	N/A
53.1	MP	To talk to Kevin King about what we need to do in the guidance for digital twins.	4.0
61.2	AW	Research the relevance of digital currencies and report back to the group (with MA and MT)	N/A
63.1	CT	Look at both Dark Data and Dazzle Data for sensors (e.g. when a sensor is saturated, in noisy environment or when readings are below the detection level floor)	4.0
64.1	MP	Contact Thor and establish the details of the guidance proposals in the paper.	4.0
69.2	RR	Explore the issue of data / software compatibility issues and to what extent data can impose requirements on software	4.0
69.3	PMcK	Develop a scoping diagram that shows how the DSG fits into the overall lifecycle process and other standards	4.0
69.4	MA	Write a short note on the issues of aggregation	4.0
69.6	MA/DA	Update the data safety tool to use the latest version of the guidance document	-

Ref	Owner	Description	Target Guidance Version
71.3	PH/DA/RO	Develop security properties thinking further for next DSIWG	4.0
71.4	PH/DA/RO	Present security properties work to next SISWG meeting	-
71.5	AM	(i) Establish if any of this can be published within the DSIWG and (ii) Consider a structuring similar to that used in security standards or ISO26262	-
71.7	MP/CT	Consider impact of FAIR data on the guidance	4.0
73.1	JK, RR	Consider production of a short note which could be used as an appendix to the guidance on lessons learnt using the guidance at TomTom	4.0
73.2	MT	Consider how the guidance fits with different lifecycles considering 'V', Continuous Service, Agile and 'Data Pipeline'	4.0
73.4	DA	See whether any of the DSITN entries from previous minutes and slides could be used to enhance the list of accidents	-
75.1	MT	Produce a short presentation on approach to updating IEC 61508 to include data safety aspects	-
75.2	TR	See if access to the ISO 25000 standards can be obtained through the IEE / IET and, if so, have a quick look at how it related to our guidance.	4.0
75.3	MT	Fix the minor typos that have been reported with v3.5 and prepare updates for both the online version and also the KDP/Amazon hardcopy.	3.5 Update
75.4	MP	Create a challenge to find the earliest documented data safety error	-