

SCSC Data Safety Initiative – WG Meeting 44

23rd January 2019, Conference call/Webex

Minutes

Attendees

Mike Parsons (MP) – CGI, Paul Hampton (PH) – CGI, Martin Atkins (MCA) – Mission Critical Applications, Divya Atkins (DA) - Mission Critical Applications, Dave Banham (DB) - Rolls–Royce PLC, Louise Harney (LH) – Leonardo, Mark Templeton (MT) – Qinetiq.

Apologies

Paul McKernan (PM) – DSTL, Peter Smith (PS) – Highways England, Mike Ainsworth (MA) – Ricardo, Amira Kavar (AK) – CGI, Fan Ye (FY) – ESC, Paul Dart (PD) – NCC Group, Andrew Eaton (AE) – CAA, John Bragg (JEB) – MBDA, Martyn Clarke (MC) – Consultant, Paolo Giuliani (PG) – EDF Energy, Rob Ashmore (RA) – Dstl, Sam Robinson (SR) – EDF Energy, Alastair Faulkner (AF) – Abbeymeade, Steve Clugston (SC) – Consultant, David Smith (DS) – FNC, Tim Kelly (TK) – University of York, Clive Lee (CL) – Rina, Ashley Price (AP) - Raytheon

Agenda

1. Production of Guidance Document v3.1 for SSS'19
2. Wikipedia article
3. NHS Data Principles
4. RAIB Report IR01/2018
5. Formal modelling activity update
6. SSS'19 update presentation
7. Training Course Development
8. Overleaf status
9. Sales/Downloads Update
10. Tooling
11. Dissemination update
12. Standards update
13. Future Events
14. Minutes and actions status
15. AOB, etc.
16. Data Safety in the News

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].*

Meeting slides are available at [3].

1. Production of Guidance Document v3.1 for SSS'19

There is now a minor version of the Guidance Document (version 3.1) ready for SSS'19. The intention is to have a small number (14) copies of this available for sale at SSS'19 [and 6 copies for DSIWG members]. This version contains minor updates and improvements; these are generally editorial in nature (typos, reference updates, etc.) but some additional guidance has been added in places: such as how to use the methods and techniques tables and there is also an additional 'war story' to reflect a recent data-related rail incident.

There is a link in the document [5] to a changed-barred PDF version on the SCSC website so the changes from the previous version are readily identifiable. The document has now been submitted for publication via Amazon (Kindle Direct Publishing) and will be available to purchase in a few days.

MT said producing change bars is straightforward and requires only a few lines of code in Overleaf. However, the process does require text to have specific markers to indicate changes and the group discussed whether this meant that changes would have to be incrementally stored. It was agreed that when the next version is started, all previous change bar markers would be stripped out.

It was agreed that the next version of the guidance would be v4.0 for SSS'20 as there will be significant additions such as machine learning and the data model.

Action 44.1 [MT] Review last 12 months of DSIWG minutes and put any actions referring to v4.0 into Appendix O.

PH noted that he has a new elephant picture (right) - based on an ornament he photographed in a shop (which is remarkably appropriate as it is covered in letters). MP asked if he could purchase the actual object so it can be placed on the desk at SSS'19. This could possibly be used as the future front cover of the guidance [or given away free with the books!].



2. Wikipedia article

LH said she is going through the process of adding a Wikipedia entry for data safety. The initial review (wrongly) rejected the initial submission on the basis that it is already covered in Data Security. It was discussed whether the Data Security entry should be updated to include Data Safety or a separate article maintained with cross references to the Data Security article.

Action 44.2 [DB/LH] To develop the Wikipedia article to get it into a position where it can pass review and be published.

DA said that there is a general misconception on what data safety means – i.e. people generally think it is meant in the sense of 'protecting data' (e.g. backing it up) rather than the safety impact of data. It was thought that getting the Wikipedia page would be good way of disseminating the group's interpretation of the term.

3. NHS Data Principles

MP said that NHS Digital have embarked on a consultation process to discuss Data Principles and that there would be clear overlap with the principles established as part of the Data Safety Guidance work. The consultation has however subsequently been withdrawn. A version of these 10 principles was discussed and it was clear that while the intention is good there are some issues as, for example, they are delving into more design intent rather than principles. The following text is an earlier draft of the NHS Digital published principles:

1. The data, and their definitions, should by design introduce no harm to the patient
2. Information and Data are an asset
3. Data held must have an identified purpose
4. Data must be categorised at the most appropriate security level
5. Data and Information must be consistent across the health and care system to enable effective data portability. Definitions must be made available to users or applications on request in a machine-readable format
6. Identifiable data should have a unique identifier associated with it that is used consistently across health and care systems (e.g. NHS Number)
7. Data and information should be reusable across the health and care system – and where appropriate beyond for secondary research purposes
8. All operational data collected should be used to assist the management of the health and care system, and not only for secondary use cases that are not defined as part of operational use
9. Data should be readily available to enable the appropriate level of sharing to authorised users. The appropriate level of sharing will be determined by the security classification of the data.
10. Each NHS data asset must have an owner accountable for data quality, definitions, policies, business decisions, and enforcement of enterprise business rules for the data.

MP said he has also found a paper on data-driven future of healthcare [1].

4. RAIB Report IR01/2018

MP discussed a rail accident report [2] forwarded by Mark Nicholson relating to the loss of speed restrictions on the Cambrian line in 20/10/2017. It was noted that the accident was almost entirely data-related. The conclusions of the report include the following:

- how the correct operation of the GEST terminal and its computer interfaces were monitored within the overall system, and why this did not detect the absence of temporary speed restriction data;
- the data available to signalling staff indicating the loss of safety critical data provided by the GEST terminal;
- how the system designers intended to manage the risk of loss of data relating to temporary speed restrictions, and why the safety validation process did not identify this potential failure mode;
- the loss of diagnostic data in safety critical software systems

5. Formal modelling activity update

DB discussed progress on the data modelling subgroup – the Ontology Working Group (DSIWG-OWG). There have been two meetings so far to understand the scope and strategy of work to be done. The approach is structured over three steps:

1. to review the structure of the ontology;

2. to look at the Data Safety Guidance text to check for consistency against the ontology and identify gaps and therefore proposals for changes to the guidance;
3. to work on the revised definitions for the terminology.

DB asked how the group should proceed with making changes to the Data Safety Guidance document, i.e. should the Overleaf project be branched and then merged at a later date. MT said Overleaf is not a full version control system; it allows for local working and synchronising but there is no branching and merging functions. It was agreed that the project should therefore be cloned to allow the OWG to work on the document independently.

DB said that it would only be useful to include the ontology model diagrams if it is meaningfully linked to the rest of the document. DB also added that the ontology needs development, as for example, it covers data HAZOP but not any other potential data-related techniques such as a data FMEA. The OWG plan to have an updated document by June 2019 and have set up weekly meetings to help support this objective.

MP said he thought the model was initially to be an appendix rather than featuring heavily in the body of the document but DB said it will have an impact on the terminology used in the body of the document. MT asked whether it would be hard for users to read but it was generally thought that this would not be the case. For example, where practicable, existing terms would be treated as subtypes of the ontological terms without modification (e.g. a Data Artefact could be considered a type of Valued Asset) although some changes of wording may be required. It was agreed that making terms too abstract should be avoided. It was noted that DB is presenting a poster at SSS'19 on this topic.

DA showed the information model used to capture the relationships required to support the tooling. It was agreed that this and the ontological model should be consistent. It was however noted that the information model is an implementation of the ontological model so some differences are to be expected.

6. SSS'19 Update presentation

MP noted that the SSS'19 programme has a slot for the DSIWG to present an update on the group's work. MP said he would give the update presentation, unless anyone else would like to!

7. Training Course Development

DB asked if the training material that MT had produced could be distributed and MT said he will seek permission as per his existing action.

8. Overleaf status

This was discussed as part of earlier topics.

9. Sales/Downloads Update

MP showed the sales and downloads for data safety guidance v3.0 book in relation to other recent SCSC publications.

10. Tooling update

DA said there was a meeting with NHS Digital, and the tool demonstrator was presented to Sean White and Mark Thomas. Mark has been trying to apply the guidance on an internal project and has

encountered problems that such a tool would help him solve so was very interested in its development.

DA also said she has received an encouraging letter from NHS Digital who have committed to the Level 2 business case of 35 days over 2 years. DA asked if others could take the business case to their companies to see if they would commit further effort. DA said she needs 3 to 4 letters of interest to be able to submit the grant request to Lloyds Register Foundation.

DA said that there is an intention to have a feature to import/export data from other standard tools such as IBM Rhapsody (system modelling), IBM DOORS (requirements management) and Adelard ASCE (safety argumentation). OLSC was thought to be the most common interchange format. It was agreed however that the data exchange requirements should be understood to help drive the technology selection.

11. Dissemination update

DA said that NHS Digital in collaboration with the University of York are running an event over 27-28th March focussing on safety considerations of AI and data in health technology, and PH said he has been asked to present. Sean White had suggested that we could give a presentation on the tool. DA wondered if it was too early to have a dedicated presentation on tooling but it is possible that PH could cover the status at the end of his presentation.

12. Standards update

Not discussed.

13. Future Events

SSS'19 was noted as the main future event and several DSIWG members are attending.

14. Minutes and actions status

The following actions were closed:

33.6: The LinkedIn page is done and the Wikipedia is the subject of a new article.

37.3: A subgroup has been created and is working on the model

37.5

39.9

41.3

41.4

41.7

41.11

42.5

42.11

43.5

43.6

43.7

Action 44.3 [MT/MP] Make contact with Martyn Clarke to see if there is any progress on Action 36.4 (production of training material)

DB said the OWG working group needs a way of collaborating so asked if a docuwiki could be set up.

Action 44.4 [DB] Ask Brian Jepson if he can instantiate an instance of a tool for collaboration.

The following actions were changed:

40.10: the target date was changed to SSS'20.

41.8: owner change to MT/BJ and text changes to: Ensure Data Safety Guidance PDFs have no ligature problems

Action 41.12: was changed to say "future meetings."

15. AOB, etc.

It was noted that the Security Informed Safety Working Group has been restarted and is now chaired by Tom Turner of BAE systems. A face to face meeting was held on 22/01/2019.

16. Data Safety in the News

It was noted that there have been some issues and outages with the Ministry of Justice systems recently but the data contribution was not known at this stage.

17. Next Meeting

The next meeting date is planned 7th March 2019, possibly at CGI in Bristol. [PH/MP to investigate]

18. Thanks

Thanks to PH for taking the minutes.

Thanks to MP for chairing the meeting.

19. Summary of Open Actions

Ref	Owner	Description	Target Guidance Version
36.4	MC	Coordinate the production of training material (based on v3.0).	N/A
39.11	MAs	To look at what funding routes may be available from Nuclear Sector for tooling.	N/A
40.10	MT	To ask if his Qinetiq course can be released to DSIWG and be presented at SSS'20	N/A
41.8	MT/BJ	Ensure Data Safety Guidance PDFs have no ligature problems	N/A
41.9	JB	Follow up with MT on how change tracking works in Overleaf and whether guidance can be added directly to Overleaf	N/A
41.10	PH	To update the healthcare trifold to include the NHS logo colour, if approved, and arrange distribution of the trifold at key healthcare events	N/A
41.12	ALL	DSIWG members to identify any influential conferences in their domain for discussion at future DSIWG meetings	N/A
42.4	LH	Get an update from RO on cyber-data properties mapping, which has been published.	N/A
42.6	PH	Define the process to publish a document developed in Overleaf via Amazon	N/A
42.7	MP	Ask John Spriggs to write a template data safety argument for the next guidance update	N/A
42.9	MP	Work out a matrix of data categories (previously 'types') and data properties (as per DB discussion)	N/A
43.1	DB	Ask John Fitzgerald at the Newcastle University if he would be interested in contributing to the guidance on Cyber Physical Systems from a data perspective.	4.0
43.2	DA	Ask John Clarke (Sheffield University) if he would like to contribute to the guidance on Machine Learning.	4.0

Ref	Owner	Description	Target Guidance Version
43.3	GH	Speak to Stephen Boyle & James Weston on Cyber security aspects of IT/OT to see if they could contribute.	4.0
43.4	MP	Write up a data focussed FMEA approach.	4.0
44.1	MT	Review last 12 months of DSIWG minutes and put any actions referring to v4.0 into Appendix O.	4.0
44.2	DB/LH	To develop the Wikipedia article to get it into a position where it can pass review and be published.	N/A
44.3	MT/MP	Make contact with Martyn Clarke to see if there is any progress on Action 36.4 (production of training material)	N/A
44.4	DB	Ask Brian Jepson if he can instantiate an instance of a tool for collaboration.	N/A

20. References

Ref	Title	Location
[1]	Our data-driven future in healthcare	https://acmedsci.ac.uk/file-download/74634438
[2]	RAIB Report IR01/2018	https://assets.publishing.service.gov.uk/media/5bc871d5e5274a0956564a41/IR012018_181018_Cambrian_TSRs.pdf
[3]	Meeting Slides	https://scsc.uk/file/gd/44th_DSIWG_MP_Slides_v2-525.pptx
[4]	Latest draft of v3.1 of the guidance document	https://scsc.uk/file/gd/DSIWG_3_1_working_document20190121-524.pdf
[5]	Published version of v3.1 of the guidance document	https://scsc.uk/scsc-127D (from 4th February 2019)