SCSC Data Safety Initiative – WG Meeting 34

7th June 2017, PA Consulting, London

Minutes and Actions

Attendees

Mike Parsons (MP) – NATS, Ashley Price (AP) - Raytheon, Rob Ashmore (RA) – DSTL, Dave Banham (DB) – Rolls-Royce PLC, Paul Hampton (PH) – CGI, Louise Harney (LH) – PA, Nick Hales (NH) – DE&S, Ali Hessami (AH) – Vega (Part), Gordon Hurwitz (GH) – Thales, Bob Oates (RO) - Rolls-Royce PLC, Chris Gilbert (CG) - Clearmatics, Davin Crowley-Sweet (DCS) - Network Rail, Divya Atkins (DA) - Mission Critical Applications, Martin Atkins (MaA) - Mission Critical Applications.

Apologies

Martyn Clarke (MC) – ALS, Mark Templeton (MT) – QinetiQ, John Bragg (JEB) – MBDA, Dale Callicott (DC) – BAE & UKHO, Alistair Faulkner (AF) – Abbeymeade, Fan Ye (FY) – ESC, John Spriggs (JS) – NATS, Janette Baldwin (JB) - Thales, Andrew Eaton (AE) - CAA, Amira Hamilton (AH) - CGI, Chris Hartgroves (CH) - Leonardo, Shaun Cowles (SC) - EDF Energy, Paolo Giuliani (PG) – EDF Energy, Michael Aspaturian (MAs) – EDF Energy, Sam Robinson (SR) – EDF Energy, Victor Malysz (VM) - Rolls-Royce PLC, Clive Kelsall (CK) – BAE, Tim Kelly (TK) – University of York, Des Burke (DeB) – BAE Systems, Simon Brown (SB) - Qinetiq, Ged Lancaster (GL) - Jaguar Land Rover, Carolyn Stockton (CS) - BAE, Steve Clugston (SC) – JLR, Andrew Murfin (AM) – EDF Energy, Robert Green (RG) – NATS, Julian Lockett (JL) – FNC, Matthew Twiselton (MaT) – MOD, Mike Ainsworth (MA) – Ricardo, Eric Bridgstock (EB) - Raytheon.

Agenda

1. Report on new structuring of guidance document
2. Network Rail Data Management presentation
3. Blockchain presentation
4. Revised Healthcare inputs
5. Feedback from hardcopy document recipients
6. SCSC update, including data related abstracts submitted for SSS'18
7. Review of 2017/2018 plans, including changes, new topics and improvements
8. Move to LaTeX update
9. Sales/downloads update
10. Formal modelling activity update – feedback on Concept Model for Data Risk Management
11. Dissemination update
12. Standards update
13. Future events, including IET
14. Minutes and actions status AOB, etc.
15. Data Safety in the News – recent articles on BA data centre outage, Police data, EASA initiative etc.

16. Next Meeting

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].*

1.   Report on new structuring of guidance document

RA discussed progress on the restructuring of the guidance document and stated that the planned changes have been documented but now need to be applied. This will require some input from JEB as part of the move to LaTeX and there are existing actions in place for that activity.

2.   Network Rail data management presentation

DCS described his role at Network Rail, his responsibilities and the direct relevance of the Data Safety Guidance to Network Rail (NR). DCS said NR treat data as an asset and he has direct responsibility for safety for NR through this mechanism. He also noted his desire to professionalise data management as a competency. DCS went on to present slides on Asset Data Governance [1]. He noted that his issues are more to do with confidence in data rather than quality as such and there can be a negative feedback loop when confidence is lost. Also, he noted that there is a balance between investment and confidence and an optimal combination of both. His approach at NR is for an output-focussed management system that is risk based rather than compliance based, and aligned with ISO 8000-150. His focus for the management system is on 9 process areas where failures could occur, such as stewardship and data flow control. DCS said he had passed the guidance on to Tim King who works in the ISO 9000 area.

3.   Blockchain presentation

CG presented an introduction to Blockchain and its application to data safety [2]. This showed how distributed blockchain technology is being used to decentralise financial and other forms of transactions. The blockchain presents an immutable and public record of transactions and has a number of potential applications such as financial transactions, provenance of physical goods, voting, crowd-funding, electricity metering, IOT devices and data management (management and selling of a individual's own personal data).

It was discussed whether the guidance should cover data marketplaces where data is sold, for example, should the properties of the data be recorded in some way so it can be used safely in a different context. It was thought that these techniques could potentially be used to assure high integrity data related transformations. It was agreed that a more focussed discussion should be held on the impact of blockchain on the Data Safety Guidance. This discussion could also be expended to cover other "emerging technologies", for example "big data".

4.   Revised Healthcare inputs

PH presented his updated version of the healthcare guidance in response to NHS Digital's more substantive comments. The main change was to move the use of DSALs to an Appendix so it is not

mandatory [3]; NHS Digital felt that health organisations are struggling to apply the guidance as it stands now and the introduction of obligatory DSALs would be a step too far.

RO noted that he has been working with an academic who has knowledge of the healthcare standards and has worked with NHS Digital in the past. It was suggested that contact is made with the individual to share the work being done in this area.

Action PH [34.1] Get in touch with Dr Farah Magrabi to share the work being done on the Healthcare Data Guidance.

PH also presented suggested changes to the DSAL matrix with notable changes being some renumbering of some key categories [4]. The following show the existing matrix used in the guidance:

	Likelihood		
Severity	**High**	**Medium**	**Low**
Negligible	DSAL0	DSAL0	DSAL0
Minor	DSAL1	DSAL0	DSAL0
Moderate	DSAL2	DSAL1	DSAL1
Major	DSAL3	DSAL3	DSAL2
Catastrophic	DSAL4	DSAL4	DSAL3

And the following is the proposed revised table:

	Likelihood		
Severity	**High**	**Medium**	**Low**
Minor	DSAL1	DSAL0	DSAL0
Significant	DSAL2	DSAL1	DSAL0
Moderate	DSAL3	DSAL2	DSAL1
Major	DSAL4	DSAL3	DSAL2
Catastrophic	DSAL4	DSAL4	DSAL3

Note that **Negligible** is replaced by **Minor** and **Minor** becomes **Significant** and there are a number of DSAL level changes.

The group was generally supportive of the revised table as it looked more balanced, but there was concern over the addition of a new criticality category (Significant); the relative ordering of Significant and Moderate was also discussed. It was thought the new table could be adopted using the existing categories but the table needs to be tested. It was noted that the High/Major change also represented a more onerous target, which might affect anyone who is adopting the guidance now. It was however concluded that the guidance is not fixed and can be tailored and it was agreed that a note should be added to that effect.

Action RA [34.2] Add text to the guidance to say the safety criteria for DSAL's can be tailored, and indeed should be reviewed and updated for each context.

It was also discussed whether the matrix could be used for other areas not just safety such as financial risk, reputational damage etc. and it was agreed that a note should be added to state that it can be used for these other areas but the focus for the guidance document is on safety.

Action RA [34.3] Add text to the guidance to say the guidance can be applied to other areas not just safety, e.g. reputational damage, financial loss, etc.

5. Feedback from hardcopy document recipients

MP has sent 3 more copies of the Data Safety Guidance [paid for by the SCSC] but has not received any feedback yet. [Post meeting update: good feedback has since been received from Ray Cherry.]

6. SCSC update, including data related abstracts submitted for SSS'18

MP noted a number of upcoming events such as the seminar discussing ALARP and some of the data related abstracts that have been submitted for SSS'18. [Events listed at www.scsc.uk/diary.html]

7. Review of 2017/2018 plans, including changes, new topics and improvements

RA said he has collated feedback on version 2.0 into 10 comments. RA proposed that a section should be added to discuss comments received and the actions taken to address them. Others felt that this should be maintained online but not in the document itself.

8. Move to LaTeX update

MP showed the update from MT on LaTeX saying that University of York have agreed to provide an account but it may not be entirely suitable for our purposes and Overleaf may be the way to go.

9. Sales/downloads update

MP presented the sales and downloads updates for the data safety guidance document: book purchases: 210, download: 563.

10. Formal modelling activity update – feedback on Concept Model for Data Risk Management

DB noted that the ISO31000 definition of risk is different from the guidance definition and this needs to be reconciled from the modelling perspective. The main difference is that in ISO31000 risk relates to uncertainty, so it can have positive outcomes and is not just focused on negative outcomes. It was thought that the current guidance is ok as it does state that it is based on ISO31000 and declares intentions on focussing on negative outcomes.

It was discussed whether the data modelling work should be included in the data safety guidance book perhaps as an appendix. DB thought it needed much more refinement before it can be included. It was thought that it should be a separate document rather than incorporated in the book itself as it will have an adverse effect on production costs.

DB showed the data risk ontology model [6] and showed the relationship between Fault, Error and Failure. It was thought that it would be useful to try and instantiate the model with a real example.

11. Dissemination update

NH said he had created a Facebook Page for the group [5] and suggested that members 'like' the page to help raise awareness of the page. LH promised to finish the LinkedIn pages she has started.

12.   Standards update
Nothing significant to record.

13.   Future Events – IET
Nothing significant to record.

14.   Minutes and actions status
The status of the previous actions was agreed, as follows:

28.5	DB	Complete
29.2	NH	Complete
31.12	MP	Complete
31.14	All	Complete
31.15	AH	Complete
32.2	MP	Complete
32.5	RA	Complete
32.7	MP	Complete
32.8	EB	Complete
33.4	JEB	Complete
33.8	MP	Complete
33.11	MP	Complete

29.9	PG	Ongoing	
31.8	MT	Ongoing	
31.11	MP	Ongoing	
31.17	MT	Ongoing	
31.18	MP	Ongoing	
31.19	SC	Ongoing	
31.21	MP	Ongoing	
32.1	PH	Ongoing	
32.6	DeB	Ongoing	
33.1	RA	Ongoing	
33.2	MC/MP	Ongoing	
33.3	LH	Ongoing	
33.5	LH	Ongoing	
33.6	LH	Ongoing	
33.7	All	Ongoing	
33.9	GH	Ongoing	Ross Harris, MSc in Information Management was mentioned.
33.10	MC	Ongoing	
33.12	RA	Ongoing	

15.   AOB
DCS mentioned Network Rail's research, development and technology challenges; these include a specific challenge related to data [8].

AP confirmed that Raytheon were content to pay for publication of the next edition of Data Safety Guidance. RO noted that the Institute of Marine Engineering, Science and Technology (IMAREST) are considering using the guidance in their cyber security work; it was also noted that the guidance features in Lloyd's Register's Cyber Enabled Ships.

DCS mentioned the Digital Built Britain initiative. This mandates Building Information Modelling on all public sector projects. There is a possibility that data safety could be integrated into this process.

DA noted that her company is keen to develop tooling support for implementing the data safety guidance and is looking for funding for this purpose. It was agreed that good tooling would have significant beneficial impact on dissemination. There is, however, a need to consider IP issues and, in particular, the terms under which members contribute to the DSIWG. There would be benefit in developing a proposed way forward for review.

Action DA [34.4] Develop a proposed way forward for developing concept demonstrator tools to support the implementation of Data Safety Guidance.

16. Data Safety in the News – recent articles on BA data centre outage, Police data, EASA initiative etc.

Due to time limitations, this agenda item was not discussed.

17. Further work: Falsification of Data, Testing Data, etc.
Due to time limitations, this agenda item was not discussed

18. Next Meeting
DSIWG #35 will be at Rolls-Royce, Bristol on July 11th http://scsc.org.uk/e521

19. Thanks
Thanks to PH and RA for taking the minutes and actions

Thanks to LH and PA Consulting for hosting the meeting.

20. Summary of Open Actions

Ref	Owner	Description	Target Guidance Version
29.9	PG	Look into adding a worked example in the civil nuclear sector	2.1
31.8	MT	Look at applying the guidance to the autonomous aircraft airworthiness example previously used to assess the dataware framework report.	2.1
31.11	MP	Talk to John McDermid to see if he can help write to various regulators to make them aware of the guidance and ask them to review/comment.	N/A
31.17	MT	To set up a subgroup including JEB, MT and RA to decide on how best to manage the implementation of the move to LaTeX. [Including hosting and collaborative environment issues.]	2.1
31.18	MP	Ensure legal and liability of the group's work is given due consideration by Tim Kelly in future meetings (disclaimers etc.), including production of WG terms of reference.	N/A
31.19	SC	Write some text about sampling rate issues and consider where in the guidance this could be included.	2.1

Ref	Owner	Description	Target Guidance Version
31.21	MP	Write some text on Falsification and submit this for review within the group.	2.1
32.1	PH	Identify a unique document name for the next version.	2.1
32.6	DeB	Generate a database of historical incidents and accidents where data is considered to have been a contributory factor.	2.1
33.1	RA	Restructure the document into informative/normative/guidance sections as proposed.	2.1
33.2	MC/MP	Review the guidance objectives, outputs and definitions.	2.1
33.3	LH	Consider adding new objectives to cover Principle 4.	2.1
33.5	LH	Add a couple of posts before making the LinkedIn page public	N/A
33.6	LH	Add everyone on the DSIWG distribution list to the LinkedIn page.	N/A
33.7	All	Investigate what simulation tools may be appropriate for data safety modelling in their sector.	N/A
33.9	GH	Forward on a contact from Cranfield University who MP can approach for introducing data safety as an academic module.	N/A
33.10	MC	Propose some contacts to approach for introducing data safety as an academic module.	N/A
33.12	RA	Update the "Incidents and Accidents" section of the document	2.1
34.1	PH	Get in touch with Dr Farah Magrabi to share the work being done on the Healthcare Data Guidance	N/A
34.2	RA	Add text to the guidance to say the safety criteria for DSAL's can be tailored, and indeed should be reviewed and updated for each context	2.1
34.3	RA	Add text to the guidance to say the guidance can be applied to other areas not just safety, e.g. reputational damage, financial loss, etc.	2.1
34.4	DA	Develop a proposed way forward for developing concept demonstrator tools to support the implementation of Data Safety Guidance.	N/A

References

[1] Asset Data Governance for Network Rail — http://scsc.org.uk/file/gd/Data%20mgt%20line%20of%20sight%20-%20NR-298.pdf

[2] Introduction to Blockchain — http://scsc.org.uk/file/gd/SCSC%20June%202017%20Blockchain-299.pptx

[3] Clinical Risk Management – Data Safety — http://scsc.org.uk/file/gd/Clinical%20Risk%20Management%20-%20Data%20Safety%20v5%20DRAFT-296.docx

[4] Suggested Changes to the DSAL Matrix — http://scsc.org.uk/file/gd/Suggested%20changes%20to%20DSAL%20table-297.docx

[5] Data Safety Guidance Facebook Page — https://www.facebook.com/Data-Safety-Guidance-1826980220962162

[6] Current Ontology Model — http://scsc.org.uk/file/gd/Proposal%20for%20a%20model%20of%20data%20risk%20management%20vA.3-294.pdf

[7] Meeting Slides — http://scsc.org.uk/file/gd/34th%20DSIWG%20MP%20Slides-295.pptx

[8] Network Rail's Research, Development — https://www.networkrail.co.uk/industry-commercial-partners/research-development-

and Technology Challenges

technology/

The data-specific challenge is available at: https://16cbgt3sbwr8204sf92da3xxc5m-wpengine.netdna-ssl.com/wp-content/uploads/2017/03/Challenge-Statement-Data-Data-quality-confidence-and-assurance.pdf