Consultation comments and responses

Document Title: Management of Control Command and Signalling (CCS) Subsystem Failures, Faults and Defects

Document number: RIS-0707-CCS

Consultation closing date: 12 May 2023

1.   Responders to consultation

No	Name	Company
1	Iain Johnson	Network Rail
2	Anonymous	N/A
3	Giles Haley	Siemens
4	Thomas Wild	Eversholt
5	James Wilson	First Rail
6	Stephen Reynolds	Rail Delivery Group
7	Anonymous	N/A
8	Control Command and Signalling Standards Committee	N/A

2.   Summary of comments

Description	Total
Consulted	315
Total comments returned	209

Classification codes for a way forward:

- DC – Document change
- NC – No change

3. Collated consultation comments and responses

No	Page	Clause	Comment	Suggestion	By	Way forward	Page	Clause	Response
19	1	General	General comments: Document has lots of redundancy. Especially with the various requirements / guidance notes in Parts 3 and 4.		3	NC	1	General	Unfortunately, as Part 3 and 4 of the standard are written from two different perspectives but about the same subject, some repetition was required. Indeed, the two parts were deliberately designed to be similar with aligned wording between the sections. Wording between the two parts can be subtly different however, with part 4 focussing on CCS subsystem failures and part 3 broadening the requirements to also consider errors, faults and defects. Equally, some guidance is equally applicable between part 3, implemented by a project at some point in the future, and part 4, applicable to duty holders. Parts 1 and 2 have had additional guidance added to clarify which sections are applicable to which organisations which should make for less repetition when reading the document - for example, only part 4 might be read rather than 3 and 4. If there is guidance that you believe should be removed, please let us know.
20	1	General	Document has lots of de-facto requirements disguised as guidance notes ("It is good practise…").		3	NC	1	General	The requirements in RIS-0707-CCS set out the characteristics of the National CCS DRACAS that are necessary to meet the principles set out in section 1. The guidance is intended to inform the specification and development of the National CCS DRACAS by setting out features and functions that are likely to be of benefit to users of the system. The detailed specification of the National CCS DRACAS will be informed by a business case – at this stage it is inappropriate to set out all good practice as requirements that would have to be followed.
8	1	General	The term DRACAS is defined differently to existing industry recognised standards, with the potential to cause confusion with respect to the methodology applied. DRACAS within this standard appears more closely aligned with FRACAS, as defined in other standards.	Harmonise the terminology with other standards, define an alternative term or include a section that explains the difference in the definition.	2	NC	1	General	DRACAS (defect) has been a recognised term in the rail industry for over a decade; this acronym aligns with previous work conducted by RSSB, Network Rail, the Digital Railway programme (and its associated outputs), the East Coast Deployment Programme etc. Other industries use the term slightly differently, as well as the words for FRACAS. As the National CCS DRACAS helps with the identification of defects by, among other things, pooling data from other systems to detect defects, this terms still appears suitable. It is not designed to be a national FRACAS, as it considers more than just failures.

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15	1	General	DRACAS- in other industries (eg Defence) stands for DATA Recording and Corrective Action System to encompass not only the failure data but also maintenance data - has this been considered?	Add some meaningful / relevant maintenance information such as Time to facilitate the repair Details of the Failure Indication (BITE message etc)	2	NC	1	General	DRACAS (defect) has been a recognised term in the rail industry for over a decade; this acronym aligns with previous work conducted by RSSB, Network Rail, the Digital Railway programme (and its associated outputs), the East Coast Deployment Programme etc. Agreed that other industries use the term slightly differently, as well as the words for FRACAS. As the National CCS DRACAS helps with the identification of defects by, among other things, pooling data from other systems to detect defects, this terms still appears suitable. Failures, faults and defects found during maintenance would be included in the National CCS DRACAS, yes, although specific repair KPIs have not been considered at this time. 'Details of Failure Indication' is already covered in, for example, 3.4.1 H) failure symptom and 3.4.2 b) "Fault indicated"
16	1	General	What is the primary objective of this standard?	Would improve the understanding of the standing if there was a clear objective stated at the start of the document	2	DC	1	General	1.1.1 has been reworded and split into bullet points to more clearly explain the purpose of the standard. New clauses G 2.1.8 and G 2.1.9 have also been added to provide additional guidance on why Parts 3 and 4 have been included in the standard.
17	1	General	Process Flowchart	The readability / understanding would greatly be improved with a process flowchart	2	DC	1	General	The process flowchart, previously located in Appendix B.2, has been moved forward to section 2.1 to provide this process overview earlier in the standard. Appendix B has been removed.
86	1	General	The way that the document has been generated, a lot of repetition exists. Although the content is not incorrect, the duplication of many paragraphs may be confusing and impact the intended 'succinct and clear' communication of the guidance.		4	NC	1	General	Unfortunately, as Part 3 and 4 of the standard are written from two different perspectives but about the same subject, some repetition was required. Indeed, the two parts were deliberately designed to be similar with aligned wording between the sections. Wording between the two parts can be subtly different however, with part 4 focussing on CCS subsystem failures and part 3 broadening the requirements to also consider errors, faults and defects. Equally, some guidance is equally applicable between part 3, implemented by a project at some point in the future, and part 4, applicable to duty holders. Parts 1 and 2 have had additional guidance added to clarify which sections are applicable to which organisations which should make for less repetition when reading the document - for example, only part 4 might be read rather than 3 and 4. If there is guidance that you believe should be removed, please let us know.
123	1	General	Should be 'shall'	Replace and look for potential similar examples in the document where ' should' has been used.	5	DC	1	General	"Should" has been replaced in G 3.3.16, G 3.5.5, G 3.9.9, G 3.10.20, G 4.2.14, G 4.7.11, G 4.8.12, G 4.9.8 and G 4.10.11.

No	Page	Clause	Comment	Suggestion	By	Way forward	Page	Clause	Response
137	1	General	On reflection there are some very good guidance clauses which imply a requirement.	Review of strong guidance clauses throughout document to potentially convert to requirements.	5	NC	1	General	The requirements in RIS-0707-CCS set out the characteristics of the National CCS DRACAS that are necessary to meet the principles set out in section 1. The guidance is intended to inform the specification and development of the National CCS DRACAS by setting out features and functions that are likely to be of benefit to users of the system. The detailed specification of the National CCS DRACAS will be informed by a business case – at this stage it is inappropriate to set out all good practice as requirements that would have to be followed.
6	7	1.1	The purpose the standard in terms of its necessity and/or benefits is not stated. 1.1.3 implies that the purpose might relate to duties under ROGS but the relevance of this to the standard is not clear.	Inclusion of a statement to clarify the necessity and/or benefits of application. If this relates to providing a consistent means of undertaking duties to cooperate under ROGS then this should be clarified.	2	DC	7	1.1	1.1.1 has been reworded and split into bullet points to more clearly explain the purpose of the standard. New clauses G 2.1.8 and G 2.1.9 have also been added to provide additional guidance on why Parts 3 and 4 have been included in the standard. Benefits of this standard have been listed in the associated Business Case for Change and Briefing Note.
7	7	1.1.1	The relationship between the two sets of requirements is not clear.	Clarification of the relationship between the two sets of requirements would assist the reader in understanding which requirements are applicable.	2	DC	7	1.1.1	1.1.1 has been reworded and split into bullet points to more clearly explain the purpose of the two parts. New clauses G 2.1.8 and G 2.1.9 have also been added to provide additional guidance on why Parts 3 and 4 have been included in the standard, how they relate to each other and who they are applicable to.
89	7	1.1.1 + General	Command Control & Signalling should use capitals for the definition (prior to the '(CCS)'	Review throughout document for all abbreviations.	5	NC	7	1.1.1 + General	Control command and signalling (not capitalised unless at the beginning of a sentence) is consistent with the RSSB Style Guide
22	7	1.1.2	What if the lineside signalling system is overlay (ETCS + national system)? Will the lineside signalling still be excluded in this circumstance?		3	DC	7	1.1.2	The requirements in this standard are intended to inform the specification of a National CCS DRACAS for CCS applications that include a CCS onboard subsystem. Where a line is fitted with ETCS and the lineside signalling system, a failure of a lineside signal can be managed entirely by the infrastructure manager. If an ETCS indication or failure symptom in a driving cab implicates a possible ETCS failure, the failure would be managed using the DRACAS. 1.1.2 has been altered to remove "the lineside signalling system" to avoid confusion.
9	7	1.1.3	The wording of the final sentence should be clarified since an accident does not give rise to risk; it is the realisation of a risk.	Clarify sentence to better convey the intended point.	2	DC	7	1.1.3	Agreed. 1.1.3 changed to now state that "An accident, incident or failure that implicates a failure, fault or defect in a CCS onboard subsystem or trackside subsystem is a shared risk" rather than "an instance when shared risk can arise".

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90	7	1.1.4	Throughout document confirm that RU is still correct (should it now be TU)? If so update document accordingly.	Update document if TU is appropriate.	5	NC	7	1.1.4	Confirmed that Railway Undertaking is still the correct term for RSSB standards
10	7	1.1.4	It is not clear how RUs and IMs can apply part 3 of this standard. Organisations may spend unnecessary effort attempting to understand/apply requirements that are not applicable to them.	The applicability of each part of the standard should be clarified.	2	DC	7	1.1.4	1.1.1 has been reworded and split into bullet points to more clearly explain the purpose of the two parts. New clauses G 2.1.8 and G 2.1.9 have also been added to provide additional guidance on why Parts 3 and 4 have been included in the standard, how they relate to each other and who they are applicable to.
91	7	1.1.5	Control and operation	Add 'and operation'	5	DC	7	1.1.5	Now included
92	7	1.1.6	2nd line: mitigation and ownership	Add 'and ownership'	5	DC	7	1.1.6	Now included
93	7	1.1.7	2nd line:	delete the word 'their'	5	DC	8	1.1.7	Word removed
23	7	1.1.8	How long is technology is considered new or novel?		3	DC	8	1.1.8	G 4.1.6 clarifies this - Using a DRACAS supports the development of learning and knowledge about the performance of newly introduced technology and existing technology where this is put into use on a part of the railway where it has not been applied before, for example, ETCS. 1.1.8 has been altered to match G 4.1.6, with the word "novel" removed.
99	8	1.2	We do not believe it is possible to seek a deviation to a RIS	Consider a rewrite of this section	5	NC	9	1.2	The word "deviation" in this section only refers to a form which needs to be filled out (this form is used for both RGSs and RISs). You are correct, a deviation itself would not be granted against a RIS. This section also reflects the wording in the front of all RSSB RISs. Conformity with RISs is made obligatory on IMs and RUs through their license conditions. A deviation from a requirement from a RIS is managed internally by the IM or RU, subject to consultation with affected parties on the proposed alternative measures. Where a proposed deviation from a requirement in this RIS could have implications on the long-term interests of the wider rail industry, it is good practice to seek an opinion from the CCS standards committee.

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24	8	2.1	Propose to add how new National DRACAS will be different from NIR-Online. The flowchart in TN-105 called up in G.4.8.23 does not clarify this.		3	DC	10	2.1	At this time, the relationship between NIR-Online and the National CCS DRACAS is not known. NIR has a remit for rolling stock failures, faults and defects whereas the NCCSD is purely for CCS subsystems. Requirements in this standard are in addition to those set out in RIS-8250-RST for NIR. As shown in TN-105, there are philosophical differences in the reporting threshold between the two systems - the NCCSD records all (notifiable) events that implicate a CCS subsystem whereas NIR has a series of criteria that need to be met before the event is reported - generally only if the event is high risk, and urgent advice is needed for other organisations. The same can be said for SMIS and RailNotices to a certain extent. I am unable to say whether a national DRACAS will replace or subsume NIR in time; at the moment, a owner for the NCCSD has not been identified. Additional guidance, reflecting the above, has been added to G 4.8.22 and G 4.8.23.
94	8	1.1.8	First line on page 9, amend to read:	'implemented on a route, train or fleet'	5	DC	8	1.1.8	Now included
185	8	1.1.9	Consideration should be given to the overarching principle for information to be necessary and sufficient. I can see how the principles satisfy the 'sufficient' criteria, but I'm less convinced about how they satisfy the 'necessary' criteria. If I was a supplier, I may only wish to share the minimum information (i.e. what is 'necessary') – how do the principles protect me if I'm requested to share more information than the minimum required to be 'sufficient'? Is there a principle(s) missing?		7	DC	8	1.1.9	An additional principle has been added to the standard to address this: "There is no obligation to share more than is sufficient to enable collaborative management of the failure, fault or defect". This principle is then cited in sections 4.4 and 4.8.
11	8	1.1.9	It is implied that Part 4 will become redundant when National CCS DRACAS is implemented. It is not clear what mechanism is in place to transition to this.	Provide clarification on the applicability of Part 4 in relation to the implementation of the National CCS DRACAS.	2	DC	8	1.1.9	Reference to the National CCS DRACAS has been removed from this guidance - it is not required. Additional guidance has been added in 1.1.1, G 2.1.8 and G 2.1.9 to note how Parts 3 and 4 relate to each other and how and why requirements may change in future.
147	8	1.1.9	Item h): Not clear what a failure conclusion is? Some clarity required.		6	DC	8	1.1.9	1.1.9 h) has been altered to replace "conclusion" with "the point at which a decision is taken to conclude an investigation, either because a corrective action or preventative action has been identified and implemented, or because a decision has been taken that no further action is necessary"

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148	8	1.1.9	There appears to be no principle for corrective action?		6	DC	8	1.1.9	Now covered under the updated 1.1.9 h)
95	8	1.1.9(e)	Amend to read:	collaborative management of the failure, fault or defect;	5	DC	8	1.1.9(e)	Now included
96	8	1.1.9(i)	'About' changed to	'relevant to'	5	NC	8	1.1.9(i)	This clause is to highlight that personnel need to be have information about what roles they hold within the National CCS DRACAS (e.g. notifier, investigator etc), their responsibilities and tasks, rather than highlighting that they have information relevant to their role. 1.1.2 has additional text to clarify that "this standard does not set out a comprehensive failure management process for use within organisations" which is where relevant information for a role would be considered. Principle 1.1.9 c) has also been reworded to note "necessary and sufficient" information is required to inform investigations.
97	8	1.1.9(j)	Consider amending as follows:	'risk' changed to 'risk and impact'	5	DC	8	1.1.9(j)	Now included
98	8	1.1.9(k)	Consider amending as follows:	'risk' changed to 'risk and defect'	5	DC	8	1.1.9(k)	Clause changed to include the words 'potential impacts' and 'defect' rather than just defect: "All implicated parties have a common understanding of the risk and potential impact arising from a CCS subsystem failure, fault or defect."
25	8	G 2.1.4 e	Siemens have always understood DRACAS as a tool to address safety-related events (potentially) bearing shared responsibility. We therefore struggle with the notion of also expecting it to deliver "performance, reduce costs and enhance reliability."

See also G.3.1.5, G.3.3.10, G.3.7.3, G.3.8.6, 1.1.1.c, G.2.2.12, G.4.1.6 and G.4.6.5 regarding this point. | | 3 | NC | 11 | G 2.1.4 e | Transport operators have a duty of cooperation to share information about safety-related events. This would not require a DRACAS. The business case for change, and the Digital Railway and Arcadis report into the benefits of a national ETCS DRACAS, identifies that the whole industry cost-benefit of implementing a DRACAS arises from the performance and reliability improvements that it enables; for example, fewer train failures, a more reliable system as defects are identified and corrected, more proactive, preventative actions are put in place etc. Whilst safety is a primary concern, the wider benefits to the industry are worth highlighting. |
| 100 | 9 | 1.5 | We assume section 1.5 will be removed upon issuing of the document? | Consider removing | 5 | NC | 9 | 1.5 | Section 1.5 will remain after publication albeit with the word [proposed] removed, in line with all other RSSB publications. |
| 13 | 10 | 2.1 | The National CCS DRACAS is referred to in present tense but in later subsections stated as having not been developed or implemented. It is therefore not clear whether statements refer to the system or the requirements of the system. | Clarify what is meant by the National CCS DRACAS in relation to this standard. Clarify tense used. Introduce the status of the DRACAS in 2.1.1 rather than 2.1.7 in order to better | 2 | DC | 10 | 2.1 | 2.1.3 has been rewritten based on other comments. This now introduces that the National CCS DRACAS is a future system and end state, developed from the RSSB System Model and Concept of Operations. This section only uses present or future tenses, depending on the context of the statement. |

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101	10	G 2.1.1	Consider amending as shown:	'As such there may not be a single duty holder'	5	NC	10	G 2.1.1	"maybe" is not required as CCS systems like ETCS definitely will distribute responsibilities that were previously IM only, onto RUs.
12	10	G 2.1.1	Check grammar: 'in comparison to'	'in comparison with' or 'compared to'	2	NC	10	G 2.1.1	Both have the same meaning - as we are comparing similar CCS systems, "to" may be preferable
102	10	G 2.1.1 (a)	Replace the word is with maybe	'defect and cause maybe outside…	5	NC	10	G 2.1.1 (a)	"there is a greater likelihood" should negate the need for the word "maybe" - the defect being outside the organisation is not a given as you say
103	10	G 2.1.1 (b)	Replace the word are with could be	'failures are more challenging' changed to 'failures could be more challenging'	5	DC	10	G 2.1.1 (b)	Replaced "are" with "may be"
104	10	G 2.1.1 (c)	Consider amend the wording and proposed	'increasingly complex' amended to 'increasingly necessary and complex'	5	DC	10	G 2.1.1 (c)	Now included
105	10	G 2.1.3	Consider amend the wording and proposed	'These processes seek to create …. DRACAS would work such that ….'	5	DC	10	G 2.1.3	Clause expanded to explain that the standard is developed from the RSSB system model, which "seeks to create alignment… etc".
106	10	G 2.1.3	Obtain an RSSB Document number and issue status for the ConOps document.	Add RSSB document reference number	5	NC	10	G 2.1.3	The RSSB Concept of Operations for the National CCS DRACAS has already been issued and without a document number. No RSSB numbering scheme exists for it. The version used for this standard is v3.1
109	10	G 2.1.3	End of second line	Information Technology should be capitalised.	5	NC	10	G 2.1.3	"information technology" uncapitalised (when mid-sentence) is grammatically correct
107	10	G 2.1.4 (b)	Consider amend the wording and proposed	Coordinating the sharing of information with local, single duty holder, maintainer, suppliers and other relevant DRACASs;	5	DC	10	G 2.1.4 (b)	"Duty holder" removed and replaced with "organisation" to be more inclusive (and is preferable to a non-exhaustive list)
149	10	G 2.1.5	a&b use the verb 'can', but c&d use noun 'are'. Is this correct?		6	DC	11	G 2.1.5	Changed to "can be" for all guidance
108	11	G 2.1.5	Consider amend the wording as proposed	(e) The system can assist in identifying the source of the defect by analysing historical information on similar events	5	DC	11	G 2.1.5	Incorporated into G 2.1.4 d) rather than G 2.1.5
110	11	G 2.1.6	Consider amend the wording and proposed	Replace Information Technology with IT	5	DC	11	G 2.1.6	Agreed, term already defined in section
186	11	G 2.1.7	There are many references to "the National CCS DRACAS will …" and this needs to be better explained in G2.1, probably following, or as part of G2.1.7. I'm looking for something that is clearer about the convention ('will') is used and that the assumption is that the implementation is consistent with the ConOps and system model.	N/A	7	DC	12	G 2.1.7	This has been incorporated into a rewritten G 2.1.3 which notes that the content of the standard has been derived from the RSSB System Model and Concept of Operations, and that the standard assumes an implementation that is consistent with these two documents.
150	11	G 2.2.3	Review punctuation		6	DC	13	G 2.2.3	Corrected - sentence split into two.

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151	11	G 2.2.4	Inconsistent use in the order of terms used re. Onboard and Trackside systems. This para states 'Trackside and Onboard', previous (1.1.1 & 1.1.6) refer 'Onboard and Trackside'	Suggest check consistency of order through whole document.	6	DC	13	G 2.2.4	Changed to "onboard and trackside" in that order throughout the document
112	13	G 2.2.8 Figure 1	Some unclear terms	Add definitions for some of the terms used (e.g. Slip or Lapse)	5	DC	15	G 2.2.8	Definitions for "slip and lapse" and "decision errors" which match RIS-3119-TOM, have been incorporated into G 2.2.8. Definitions have also been incorporated into G 2.2.9 for "intended human actions". Further information on Human Performance Influencing Factors can be found in RIS-3119-TOM; this avoids repeating material.
26	14	G 2.2.12	Given our comment #7 above we consider this guidance note irrelevant to the core of DRACAS.		3	DC	15	G 2.2.12	The figure of unwanted events, unwanted actions, influencing factors and defects shows how a fault relates to the defect and the unwanted actions and events; ergo fault needs to be considered in G 2.2.12. Assuming that the words 'reliability and availability' relate to 'comment #7', this sentence has been removed as it did not add to the definition.
115	14	G 2.2.12	Intermittent transient is a repeat	Consider using the preferred term only	5	DC	15	G 2.2.12	Changed to "intermittent or 'transient' faults"
116	14	G 2.2.13	Should this cover impact to human and system performance?	Consider adding system performance.	5	NC	16	G 2.2.13	System, in this case, would refer to both human and technology performance (the latter referred to as a fault). Therefore "system performance" does not need to be repeated.
113	14	G 2.2.6	Over long and complex sentence	Reword the sentence to make clearer.	5	DC	15	G 2.2.6	Split the sentence in two. The second sentence reflects the definition of technical error.
114	14	G 2.2.7	The fault within the CCS system could mislead a person, or another system	Add system to the final sentence.	5	DC	15	G 2.2.7	Now included
27	15	G 2.2.14		Propose merging into / moving next to G 2.2.1	3	NC	16	G 2.2.14	The clauses in section 2.2 match the order of the terms used in figure 1 (now 2) and hence appears as a later definition. A defect is not an unwanted event and hence cannot appear in the list of unwanted events in G 2.2.1
117	15	G 2.2.14	'intended usage requirement' to 'intended function usage requirements'	Consider amending as shown	5	NC	16	G 2.2.14	This clause repeats the agreed definition of 'defect' used in other standards. 'Functional usage requirements' might constrain the term to just technology rather than the current one which can encompass human behaviour
80	15	G 2.2.16	Defining the Notifiable event threshold should be contained within RIS-0707-CCS rather than referring out to the Concept of Operations. This is also referred to in G3.1.6	The definition for Notifiable event could be amended to outline the minimum notifiable threshold.	4	DC	16	G 2.2.16	The threshold to be reported to the National CCS DRACAS has now been included in G 2.2.16 followed by the definition of a notifiable event in G 2.2.17. The threshold mirrors the principles and text set out in the Concept of Operations (issue 3.1) section 11.2.1. Requirement 3.1.1 is now verifiable.

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152	15	G 2.3.1	b) I question the use of 'product' in this context. 'replacing a CCS trackside subsystem component' - is not 'rectifying' a 'product'.	Consider using 'component' or 'device' to replace 'product'. Note G 2.4.2 uses the term 'element'.	6	DC	17	G 2.3.1	Agreed. References to 'product' removed. The definition for corrective action has been made more succinct.
118	15	G 2.3.1 (a)	CCS is a term defined in this clause but already used.	Consider searching the document for unnecessary redefinition of terms similar to this example.	5	NC	17	G 2.3.1 (a)	Acronyms are spelt out each time they appear in a section (in this case 2.3) rather than the document itself. This is consistent with the RSSB Style Guide
119	16	G 2.4.1 (a)	Train Protection systems are not all equal, with Class A and Class B defined.	Define the Class A (ETCS) and Class B (TPWS) protection systems. Add RETB as another protection system.	5	NC	17	G 2.4.1 (a)	Agree that not all Train Protection Systems are equal, however introducing Class A and B into this guidance seems superfluous - the point of this clause it to say that trains will be operating with a Train Protection System of some sort, whether Class A or B. I'm not sure what value introducing ETCS as a Class A system would bring - it doesn't change the rest of the section and wouldn't be used elsewhere in the standard.
120	16	G 2.4.3	The same supplier may be used for onboard and offboard	'onboard subsystems is likely to distribute'	5	NC	18	G 2.4.3	True, however the accountabilities would remain with the IM and RU whether their suppliers are different or not. This clause is reiterating the point that RUs now have more, previously IM accountabilities and responsibilities, than they used to with TPWS/AWS for example.
153	16	G 2.4.3	Review punctuation		6	DC	18	G 2.4.3	Clause reworded and extra punctuation added
18	17	G 2.5.1	A RACI chart to explain these roles	A RACI (Responsible, Accountable, Consulted, Informed) chart would increase the understanding of these roles	2	NC	18	G 2.5.1	Great suggestion. As the roles aren't mentioned in the standard, bar a couple of mentions for the independent roles listed in G 2.5.2, we'd like to take this forward into the next version of the Concept of Operations initially as there would be limited value in adding this to the standard at this time. There would also be more information about the roles in this document anyway. This RACI can then be transferred into the standard as the National CCS DRACAS is implemented and the roles are added to the appropriate requirements.
121	17	G 2.5.1	Amend list as suggested	Add supplier to the list	5	NC	18	G 2.5.1	A supplier may take on several of the roles listed in G 2.5.1. Whilst most likely the CCS Subsystem Maintainer, they could also be the Implementor. Note that this is not meant to be a list of possible organisations, like IM, RU, supplier etc; this is a list of possible roles with defined responsibilities that an organisation could take on

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28	17	G 2.5.2 b)	The document uses the term "organisation" at various places (this clause being one of them). However, G.2.5.3.a states "a role may be fulfilled by a human, organisation or machine."	Propose replacing "organisation" with "entity" and defining "entity" as umbrella term for G.2.5.3.a	3	DC	19	G 2.5.2 b)	Agreed, 'organisation' isn't needed in G 2.5.2 b). Replaced with 'role' to align with the rest of this section.
187	18	3.1	The criteria for a 'notifiable event' needs to be introduced before this section. There is no clear definition of an notifiable event. G4.1.15 provides guidance, but is not exhaustive. In the absence of this, the requirement in 3.1.1 is not verifiable.	N/A	7	DC	20	3.1	The threshold to be reported to the National CCS DRACAS has now been included in G 2.2.16 followed by the definition of a notifiable event in G 2.2.17. The threshold mirrors the principles and text set out in the Concept of Operations (issue 3.1) section 11.2.1. Requirement 3.1.1 is now verifiable.
122	18	3.1.1	Telecoms network is a relevant sub-system.\n\nShould this be G3.1.1?	Add Telecoms network to the list	5	NC	20	3.1.1	Telecoms are a relevant subsystem and are included in the CCS onboard / trackside subsystems definitions, as outlined in G 2.4.1, specifically point d).
188	18	3.1.1 b) and c)	3.1.1 b) and c) require all events to be recorded. G3.1.2 makes reference to a threshold, but this is irrelevant as there is no condition in the requirements in 3.1.1 relating to any threshold. Is 3.1.1 really about the capability that is required to record data, rather than the requirement to record data (i.e. a scoping requirement)?	N/A	7	DC	20	3.1.1 b) and c)	Requirement 3.1.1 has been shortened now that additional guidance is provided in section 2.2 regarding what a notifiable event is and the threshold that needs to be surpassed to be considered as one.
189	18	G 3.1.2	Notwithstanding the previous comment, there is a requirement in this clause relating to a 'defined threshold' which is not defined, and hence the requirement is incomplete and cannot be verified.	N/A	7	DC	20	G 3.1.2	The threshold to be reported to the National CCS DRACAS has now been included in G 2.2.16 followed by the definition of a notifiable event in G 2.2.17. The threshold mirrors the principles and text set out in the Concept of Operations (issue 3.1) section 11.2.1. Requirement 3.1.1 is now verifiable.
81	18	G 3.1.6	(as above) Defining the Notifiable event threshold should be contained within RIS-0707-CCS rather than referring out to the Concept of Operations. This is also referred to in G2.2.1.6	The definition for Notifiable event could be amended to outline the minimum notifiable threshold.	4	DC	20	G 3.1.6	The threshold to be reported to the National CCS DRACAS has now been included in G 2.2.16 followed by the definition of a notifiable event in G 2.2.17. The threshold mirrors the principles and text set out in the Concept of Operations (issue 3.1) section 11.2.1. Requirement 3.1.1 is now verifiable.

No	Page	Clause	Comment	Suggestion	By	Way forward	Page	Clause	Response
30	18	G 3.1.8	This guidance note implies "manufacturers, suppliers, maintainers and owners" are also involved with DRACAS. However, reading this in the context of 1.1.7, G.2.2.4, G.3.5.2, G.3.5.8 and especially G.4.1.19 we are left wondering how this process is going to work in case we are not.		3	NC	20	G 3.1.8	Yes, all the organisations listed would need to be involved in the National CCS DRACAS for it to be truly effective. As a Rail Industry Standard is not applicable to suppliers, manufacturers etc, requirements cannot be made on them, and hence they are only mentioned in guidance, as highlighted in G 3.1.8. Contractual arrangements can be used to apply these requirements to the organisations listed but this is outside of the scope of the standard itself. Work outside of this standard, for instance the National CCS DRACAS Roadmap and the East Coast Deployment Programme (ECDP) DRACAS proof of concept, are looking at involving the organisations listed and considering incentives, obligations and commitments required.
154	18	G 3.1.8	The term 'maintainer' is used here. Previous sections also use the term 'operator'. Are these the same or should 'operator' be added?	See also G3.5.8 for a further variation on these terms. Suggest review this through whole document	6	DC	20	G 3.1.8	List of organisations now matches G 3.5.8 with 'operators' now included
29	18	General	Various references to "all notifiable events" (3.1.1.a), "defined threshold" (G.3.1.2) and "reporting threshold" (G.3.1.6) which serve no purpose other than muddying the waters as to what to report and what not to report. Can this threshold be defined, please? (we note section 11.2.1 of Concept of Operations for the National Control Command and Signalling Defect Recording, Analysis & Corrective Action System (DRACAS), issue 3.1 as per G.2.2.16)	If a definition is not possible at this stage, we suggest staying with the logic of RIS-0707-CCS Iss 1. See our comment 37.	3	DC	20	General	The threshold to be reported to the National CCS DRACAS has now been included in G 2.2.16 followed by the definition of a notifiable event in G 2.2.17. The threshold mirrors the principles and text set out in the Concept of Operations (issue 3.1) section 11.2.1. Requirement 3.1.1 is now verifiable.

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85	18	General	On reviewing the RIS, the logical sequence of sections was challenging to follow. Parts 2 and 3 outlines the requirements of the future National DRACAS system before Part 4 covers the day-to-day ongoing CCS failure management process and rationale (originating from GERT8106). To improve the clarity of the document and in the absence of a national CCS DRACAS, would it be preferable for the high-level requirements of processes to manage CCS failures (section 4) to appear earlier within the document, with the requirements for the national CCS DRACAS appearing as a subsequent section?	Bring part 4 content forward in the document so that the National DRACAS requirements are covered after the regular CCS failure management requirements and justifications.	4	NC	20	General	The rationale for the order of requirements (National CCS DRACAS first then CCS failures second) is now explained in section 2.1 (2.1.7 onwards). As Part 4 has guidance on how requirements may change in future, these may not make sense unless the aims of the National CCS DRACAS are explained first. Hence the requirements for the National CCS DRACAS are shown in Part 3. The applicability of each Part to different organisations is also explained more clearly in section 2.1.
82	19	3.2.2	At least one failure symptom is required for entry into National DRACAS – this must align with the Notifiable event threshold. This implies that any hidden defect that has not yet presented itself as an in-service failure need not be reported, even if it may be found by code review/maintenance test etc. Is it correct that known defects which have not yet caused incidents are not reported?	Given the complexities of newer CCS systems, should the definition of Notifiable event include identified defects which have the potential to cause an incident yet are (so far) without symptom?	4	NC	21	3.2.2	"The National CCS DRACAS shall require the entry of at least one failure symptom, whenever a failure of a CCS subsystem is recorded." - the failure symptom only needs to be recorded when a failure event occurs. Not all faults and defects would not have a failure symptom as you rightly say, therefore when recording a defect, the failure symptom would not be a mandatory field. Re suggested text, yes, all defects which have the potential to cause a failure, incident or accident would be recorded, even if they are yet to lead to one. This will be clarified with additional text defining the reporting threshold (in response to other comments).
32	19	3.2.3	This requirement uses the word "implicated". This can also mean "implied" – which G.3.1.9 deems a no-no.		3	DC	21	3.2.3	Requirement reworded to remove 'implicated' and be more succinct

No	Page	Clause	Comment	Suggestion	By	Way forward	Page	Clause	Response
190	19	3.2.3	I don't understand why the National CCS DRACAS assigns the risk classification as 4.2.1 requires the operator of the CCS subsystem to do this. Similarly 3.2.4 is redundant as this is required by 4.2.2 earlier in the lifecycle.	N/A	7	DC	21	3.2.3	3.2.3 has been reworded to be more succinct and guidance in G 3.2.12 strengthened to say "if not already populated by the reporting organisation", and outlines what the process put in place could be. "The process put in place may validate that the risk classification has been populated or may provide guidance on what risk classification to use based on the symptoms." Note that in this issue, the requirements in section 4 (those quoted) only consider the population of failure risk classifications. 3.2.3 is different in that it requires the risk classification for failures, faults and defects.
33	19	3.2.4	What further implications does this classification have? Does it only serve to triage how quickly the issue needs addressing (G.3.2.6, G.4.1.17)?		3	NC	21	3.2.4	This requirement is to ensure that the failure is treated as high risk until evidence suggests otherwise; this requirement was also in issue one of the standard. 3.2.4 and other clauses in section 3.2 have been reworded, as a result of other feedback to improve clarity and address concerns that this requirement may lead to over or under reporting of events. As soon as evidence is available that the event is not a wrong-side, high risk one, the classification can be changed, in line with section 3.5 (updates to information and data)
31	19	G 3.1.9	'Implied information' could be useful to understand why an issue had been filed.		3	NC	21	G 3.1.9	Inferred or implied information in this case is referring to, for example, trying to attribute blame based on conjecture rather than facts. In creating the System Model, this was to cover statements like "this happened, it must be supplier X's fault because they are rubbish" etc. As the rules for this have not been set yet, we have decided to retain this guidance although it may be revised in future issues.
191	19	G 3.1.9 to G 3.1.11	There are statements of fact recorded here. What makes this factually correct, where is the evidence to support this? For example, where are the requirements for the National CCS DRACAS that mean these statements are correct?	N/A	7	DC	21	G 3.1.9 to G 3.1.11	All highlighted clauses changed to start with "The RSSB Concept of Operations the National CCS DRACAS states that …". This no longer makes them statements of fact about a non-existent system.
124	19	G3.2.5	It is important that the language is 'common'	Add 'common language'	5	DC	21	G3.2.5	Now included
192	20	3.3.1	Seems restrictive not to include ECMs, suppliers and contractors. Is there rationale to exclude them?	N/A	7	DC	22	3.3.1	Agreed. The requirement has been changed to allow for more organisations to contribute with the minimum being IMs and RUs. "The National CCS DRACAS shall be capable of receiving information and data reported by, _as a minimum_:"

No	Page	Clause	Comment	Suggestion	By	Way forward	Page	Clause	Response
35	20	3.3.1	This contradicts to G.3.1.8		3	DC	22	3.3.1	Agreed. The requirement has been changed to allow for more organisations to contribute with the minimum being IMs and RUs. "The National CCS DRACAS shall be capable of receiving information and data reported by, *as a minimum*:"
193	20	G 3.2.12	I don't agree with "…the timescales for republication of this standard means that the National CCS DRACAS will be updated first." as we don't know how long it will take to update the National CCS DRACAS. Note that it could be possible to change the RIS in less than three months, if required. I'm not sure what value this guidance adds?	N/A	7	DC	22	G 3.2.12	Agreed, guidance removed
83	20	G 3.2.14	The example in the 2nd sentence is confusing – is it necessary? If a negligeable risk fault led to an investigation which uncovered a higher risk potential defect, that newfound defect should be investigated with a proportional level of urgency. The original negligeable risk classification would not have increased the expediency of finding or resolving the new high-risk defect.	Restructure or reword the example.	4	DC	22	G 3.2.14	An additional sentence has been added to the example to note that an additional event report for the high risk defect would be raised with the National CCS DRACAS"so that other organisations can be alerted to its existence" and investigations be put in place accordingly. You are correct, the classification of the fault would not change - it is the defect that is high risk.
84	20	G 3.2.14	The assigned risk classification is used to alert organisations to underlying issues including faults and defects that have not yet caused a CCS subsystem failure, incident or accident. I agree with this but is it in conflict with the need for a failure symptom in requirement 3.2.2 which implies that a failure needs to happen before it is reported/notifiable	Clarification on whether hidden defects which have not yet caused a CCS subsystem failure are intended to be Notifiable.	4	DC	22	G 3.2.14	Based on other comments, 3.2.2 has been changed to clarify that the "failure symptom" field only needs to be populated when a failure event occurs, not at other times. This should resolve the possible conflict with this clause. Section 2.2 details which events would be notifiable - defects, even if they have not caused a failure, would be notifiable, yes. Also based on other comments, the threshold for an event to be reported to the National CCS DRACAS has also been clarified
34	20	G 3.2.14	Re the sentence starting with "For example…" see our comment 37.		3	DC	22	G 3.2.14	The example in G 3.2.14 has been rewritten, based on other comments, to be clearer on lower risk fault reports could be related to a higher risk defect, with the subsequent change in resource prioritisation etc.

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36	21	G 3.3.10	Re "performance trends" see our comment 8.		3	NC	23	G 3.3.10	Responded to in the associated comment. Improvements in system reliability and performance as well as reduced costs, are benefits identified in the Business Case for Change and the Digital Railway + Arcadis Phase 2 report into industry benefits from a national ETCS DRACAS. The guidance is proposed to stay.
155	21	G 3.3.6	Rationale refers to '..multiple failure management systems and DRACAS applications'. This references two sources, but the requirement (3.3) refers only to the singular 'DRACAS applications'.		6	DC	23	G 3.3.6	Agreed. 3.3.3 has been changed to not mention "DRACAS Applications" specifically as the information may come from other sources, as noted in G 3.3.6. Requirement now says "information technology (IT) applications"
14	22	3.4.1	The collected data does not appear to be sufficient to provide a meaningful / complete analysis of the incident.	In order to make the subsequent analysis easier / meaningful /complete the following information should be collected at the time of raising the DRACAS report Equipment Supplier Part Number / Serial Number of the failed item Part Number / Serial Number of the Replacement Item Issue status of the system eg Software/Firmware versions running	2	DC	25	3.4.1	The fields listed in sections 3.4 and 4.4 are the minimum expected for a reported failure event. For the fields mentioned: Guidance has been added to G 3.4.11 and section 3.7 to refer to the automatic identification of maintainers / suppliers through a database within the National CCS DRACAS, as proposed in the Concept of Operations. Part and serial numbers, and software and firmware version, have been added to the guidance table in section 4.4.
111	22	3.4.1 & 3.4.2	The requirements for a Common Language to facilitate DRACAS should be defined	Add Common Language requirement	5	DC	25	3.4.1 & 3.4.2	"using a common language across organisations" has been added to the rationale in this section (G 3.4.4). As a common language has not been fully developed, defined, or consulted (beyond what is already in the standard), it would be challenging to make this a requirement that organisations can comply with. As the National CCS DRACAS is developed, and a common language becomes more prevalent or developed, this requirement can be updated and added to.
194	22	3.4.1 and 3.4.2	I don't see how there can be a requirement for the National CCS DRACAS to receive something. I'm ok with a requirement to record, once received. The passive requirement to receive needs to be turned into an active requirement on someone to send.	N/A	7	DC	25	3.4.1 and 3.4.2	Requirements changed to "shall be capable of receiving and recording" rather than "shall receive and record"

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37	22	G 3.3.14	We do not consider "automatically populate […] using an online form" to be a manifestation of 3.3.2 "automated transfer". The latter would imply some API into a database. However, this case does not seem to be currently defined at all.		3	DC	24	G 3.3.14	Guidance changed to incorporate that information and data can be populated via an online form and REST API or other system-to-system APIs. As the National CCS DRACAS has not been implemented, it is challenging to be more specific than this. "Organisations can provide information and data to the National CCS DRACAS using an entry form. Where existing systems are technically compatible with the National CCS DRACAS, information and data can be automatically populated using an online form, for example through a representational state transfer (REST) application programming interface (API). Other methods of data exchange, including direct system-to-system APIs, can also be used for automated transfer."
125	22	G 3.3.20	Consider changing 'Documentation to 'Guidance'	Consider suggestion made	5	DC	24	G 3.3.20	Agreed, changed to "guidance"
156	23	3.4.1	j) the 'and' is not necessary and suggests something is missing.		6	NC	25	3.4.1	This is the RSSB style for lists ("; and" for the penultimate bullet point)
157	23	3.4.2	b) the 'and' is not necessary and suggests something is missing.		6	NC	25	3.4.2	This is the RSSB style for lists ("; and" for the penultimate bullet point)
38	23	G 3.4.8 c	Is the reference to 'the system' to be understood in the definition given by G.2.4.2.a? I.e. does this include faults tolerated by human operators (despite this potentially being not the right thing to do)? – this seems to go against the spirit of the guidance note, hence our question.		3	NC	26	G 3.4.8 c	Interesting question. In the System Model, "Fault Tolerated" was to capture or note events where a subsystem failed but a back-up subsystem or component stepped in to prevent a failure, incident or accident; which seemed likely to happen with SIL4 systems. This was to give a perspective of system reliability as, for example, analysis might show that there have been no failure events, but using this field, it is possible to see that whilst the system might not have failed, back-up systems are being triggered or overly relied upon. This could include degraded operations for "human operators". In your example, a fault would still be reported to the National CCS DRACAS, and may have commentary in this field to describe how the fault was tolerated, whether by a person or piece of technology.
126	24	G 3.4.10	Add reference to CONOPS document number	Add reference number	5	NC	26	G 3.4.10	The RSSB Concept of Operations for the National CCS DRACAS has already been issued and without a document number. No RSSB numbering scheme exists for it. The version used for this standard is v3.1
127	24	G 3.4.13	Consider changing the first sentence as shown:	The train identity can be established by recording the….	5	DC	26	G 3.4.13	Clause changed to "train service identity" to incorporate other consultation feedback. Suggested change has been incorporated as well.

No	Page	Clause	Comment	Suggestion	By	Way forward	Page	Clause	Response
129	24	G 3.4.14	The time reference should be defined (e.g. GMT). One onboard supplier uses French time in its internal logs.	Consider defining the time reference to use.	5	DC	26	G 3.4.14	Agreed. Guidance in G 3.4.14 has been expanded to include this. "For effective data analysis, the National CCS DRACAS will likely use Coordinated Universal Time (UTC) for all reported events. This is harmonised with the European Train Control System (ETCS) specifications. Organisations may need to consider which time, or time standard, data loggers or equipment monitoring devices are using when sharing information with the National CCS DRACAS. "
39	24	G 3.4.14	Specify to add time zone details, Subset-027 requires ETCS JRU data to be recorded using UTC.		3	DC	26	G 3.4.14	Agreed. Guidance in G 3.4.14 has been expanded to include this. "For effective data analysis, the National CCS DRACAS will likely use Coordinated Universal Time (UTC) for all reported events. This is harmonised with the European Train Control System (ETCS) specifications. Organisations may need to consider which time, or time standard, data loggers or equipment monitoring devices are using when sharing information with the National CCS DRACAS. "
128	24	G3.4.13	TRUST data is very likely to be recorded by the onboard, or the RBC, and hence won't be available in real time and would need analysis post event to discover the TRUST id.	Consider using the alphanumeric headcode plus the signal number or marker board used at start of mission. Alternatively the headcode plus RBC may be sufficient to uniquely identify a train.	5	NC	26	G3.4.13	Agreed that this would not be recorded in realtime or by the EVC, JRU or RBC. The 4 character alphanumeric, which is easier to find, could be used if required. The guidance in this clause is to aid the unique identification of the train service within the National CCS DRACAS itself, rather than a local system where the event is first reported. Noting also that the headcode and signal number would not be unique either. As the National CCS DRACAS has not been implemented, it is challenging to be more specific on how train services will be identified.
159	25	G 3.5.10	'…which part of a CCS subsystems is the cause of the event.' Typo – singular and plural		6	DC	28	G 3.5.10	Plural removed
160	25	G 3.5.11	c) the 'and' is not necessary and suggests something is missing.		6	NC	28	G 3.5.11	This is the RSSB style for lists ("; and" for the penultimate bullet point)
40	25	G 3.5.2	Duty of cooperation is not defined. Is this to be understood in the definition of ROGS Regulation 22 or different?		3	NC	27	G 3.5.2	Yes, this refers to Regulation 22 of ROGS
158	25	G 3.5.6	Should this align with 'unwanted event' as defined in section G 2.2.1? Noted that 'error' is additional to that previous definition.		6	DC	27	G 3.5.6	Guidance changed as suggested, to align with the definition of Unwanted Event

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41	25	G 3.5.7	Traceability of events (and their identifiers) is not clearly defined/mandated at present. Instead references to the problem can be found in various places (here, G.3.6.6. and 4.3.1). We note G.3.6.8 and G.3.6.9 seem to suggest traceability is actively not desired. However, the reasons are not obvious to us. Compare with NIR-Online identifiers.	Suggest mandating that a national identifier must be traceable back to the identifier defined in 4.3.1	3	DC	27	G 3.5.7	Guidance has been added to G 3.6.5 to specifically state that the National CCS DRACAS will "retain the event notifier's identifier and the corresponding national event identifier". Requirement 3.6.1 ensures that the National CCS DRACAS always uses the national event identifier to keep traceability. The corresponding requirement on duty holders is within 4.3.1 with guidance in G 4.3.5 to note how there is a need in future to use the national event identity.
161	26	G 3.5.12	d) the 'and' is not necessary and suggests something is missing.		6	NC	28	G 3.5.12	This is the RSSB style for lists ("; and" for the penultimate bullet point)
162	26	G 3.5.17	g) the 'and' is not necessary and suggests something is missing.	Suggest review this for the whole document	6	NC	29	G 3.5.17	This is the RSSB style for lists ("; and" for the penultimate bullet point)
195	27	3.6	The need to combine multiple events into a single event when the same thing is reported by multiple actors needs to be considered and included. G3.10.22 makes reference to duplicate entries, but I wouldn't expect integrity checks to remove multiple records when the same event is reported potentially differently (based on relative perspective) by multiple actors. G 4.8.18 recognises this too.	N/A	7	DC	29	3.6	Guidance has been added to G 3.6.7 to clarify that multiple failures could be reported for one fault - all the reports get a unique event identifier when submitted to the National CCS DRACAS and that an additional record, with its own identifier, would be created when a common fault is found to link all the failure reports together.
42	27	3.6		Suggest renaming "identity" to "identifier" as the former could be mistaken for the identity of one of the entities defined in G 2.5.2.b (i.e. a kind of 'login')	3	DC	29	3.6	Agreed. All clauses in the standard now refer to the "national event identifier".
130	27	G 3.6.2	The likelihood of errors made during data entry is reduced	Consider adding comment	5	DC	29	G 3.6.2	Now included
163	28	G 3.7.2	Review punctuation		6	DC	31	G 3.7.2	Sentence split into two
164	28	G 3.7.2	'… leading to corrective actions and preventative actions…'	Revise wording '… leading to corrective and preventative actions…'	6	DC	31	G 3.7.2	Word removed
131	29	G 3.8.5	Please clarify what the term 'outlier' means in this context?	Add clarification.	5	DC	32	G 3.8.5	Meant in the statistical sense, for instance an outlier on a graph, where an observation that is an abnormal distance away from other values. Clarified in the clause to be "statistical outliers"

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43	29	G 3.8.5 b)	We do not understand the role of 'contractual KPIs' at National DRACAS level? Whose contract would that be? See also G.4.6.7		3	DC	32	G 3.8.5 b)	The Concept of Operations discusses that the data in the National CCS DRACAS is less effective when KPIs/objectives/'what good looks like' is not defined. Until national KPIs are established, KPIs that are used in contracts are cited as an alternative in the shorter term so that, for instance, if 3 failures have happened in the past year, and a contract KPI says it is 2 per year, the abnormal performance can be identified. However, as these don't need to be contractual, and clause is only giving an example, 'contractual' has been removed
165	30	3.9.2	'When unsuccessful….the National CCS DRACAS shall repeat the transfer of information at least two more times.' Something that has not happened cannot be repeated.	Review wording, suggest – When unsuccessful….the National CCS DRACAS shall attempt the transfer of information at least two more times.'	6	DC	33	3.9.2	Changed as proposed
166	30	3.9.2	Attempting transfer of data has no time limit. Thus, it could try 3 times per second or 3 times per week.	I suggest a time limit per 3 attempts is added. E.g. '…..DRACAS shall repeat (attempt?) the transfer of information at least two more times within a period of xx (1 hour?)	6	DC	33	3.9.2	Agreed. "within one hour" has been added to the requirement
132	31	3.10.2	Should Cyber security also be defined in this clause	Consider adding cyber security	5	NC	34	3.10.2	ISO 27001 defined cybersecurity as "preservation of confidentiality, integrity and availability of information in the Cyberspace". This would align with the aspects of data security detailed in G 3.10.17. Cybersecurity is mentioned in multiple clauses in this section, including a reference to ISO 27001 is G 3.10.27
133	32	G 3.10.16	Should Cyber security also be defined in this clause	Consider adding cyber security	5	NC	35	G 3.10.16	ISO 27001 defined cybersecurity as "preservation of confidentiality, integrity and availability of information in the Cyberspace". This would align with the aspects of data security detailed in G 3.10.17. Cybersecurity is mentioned in multiple clauses in this section, including a reference to ISO 27001 is G 3.10.27
44	32	G 3.10.18		Rather than explicitly listing certain technology for encrypting data we suggest referring to 'state of the art' instead.	3	DC	35	G 3.10.18	The two examples of encryption are provided only as guidance and are not the only methods available, as noted at the end of the clause. They have been included as a result of initial feedback when writing the standard that as this is a new section not included in issue one, and that data security is increasingly important, examples to help organisations would be preferable. The final sentence of G 3.10.18 has been expanded to state that "Other symmetric and asymmetric encryption algorithms are available, and are quickly evolving with state-of-the-art encryption methods becoming increasingly secure. "

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167	35	4.1.1	It is not clear how this is different to 4.2 other than it does not require managing to a conclusion? If not managed to a conclusion, when will it end? Is this intentional?	Please clarify	6	NC	38	4.1.1	(Assuming the comment refers to 4.1.2 rather than 4.2 which is unrelated). 4.1.1 permits the use of a failure management system to manage and record accidents, incidents and failures. 4.1.2 requires the use of a DRACAS (not FMS) for ETCS.
168	35	4.1.2	In addition to the previous comment, this requirement does not need to be recorded, only managed. Is this intentional?	Please clarify	6	DC	38	4.1.2	Agreed, "recorded" added to the requirement
169	35	G 4.1.8	Table goes across a page break which is messy		6	DC	38	G 4.1.8	Resolved in new version
134	36	G 4.1.10 (b)	Signal passed at danger	Add exceedance of movement authority (there may be no signal present)	5	DC	39	G 4.1.10 (b)	Now included
2	37	4.2 G4.2.18	Having been a SINCS Engineer for Network Rail for fifteen years I am wary of the value offered in applying a location rating to equipment. The time (effort) required to gather the data (Sectional Appendix / timetable / rail maps) and generate this rating would be better spent on investigating / mitigating the failure. The level of granularity offered by having five or six factors is infinite, but offers little value. The same effect can be realised by considering Linespeed and Service intensity – these two factors evaluate likelihood and consequence	Simplify this component. See NR/L3/TEL/40047 for a potential suggestion.	1	DC	40	4.2 G4.2.18	Excellent to hear real world feedback. This section draws on NR/L3/SIG/20047 and follows the guidance on how to prioritise signalling failures. As a result of this comment, a number of changes have been made: a) the hazard index previously shown has been moved into its own guidance section and titled "Guidance on a hazard index created for signalling failures"; b) a new guidance section has been introduced to show how the location rating is generated in NR/L3/TEL/40047 and titled "Guidance on a hazard index created for telecoms failures"; c) consequence factors have been changed to include some of those featured in NR/L3/TEL/40047; and d) negligible risk event risk classifications have been changed to 1 (based on other feedback). Organisations now have two examples to choose; both are shown as using the signalling failure example may help alignment with NR/L3/SIG/20047 in organisations wider than Network Rail.
196	37	4.2.2	(and potentially 3.2.4) There needs to be case that the immediate high risk classification (in absence of better information) doesn't immediately set of a chain of events (that may be entirely appropriate to a genuine high risk event) that are inappropriate to an event that hasn't been classified but is unlikely to be high risk. This could result in two potential high level outcomes, a suppression of reporting and a loss of credibility in the system.		7	DC	40	4.2.2	4.2.2 and 4.2.3 have been reworded to be clearer on the circumstances they apply to. Additional guidance has been added to G 4.2.11 to clarify this and that experience with the National CCS DRACAS may change this requirement in future to combat over- and under-reporting or disproportionate investigation efforts.

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3	37	4.2.2 G4.2.6.	Whilst I appreciate the aim of this clause it will tend towards generating superfluous entries into the system by people with inadequate knowledge. Incorrectly entering failures leads to wasted resource – this leads to limited investigation and increases potential for failure recurrence in relation to those events that should be recorded.	.	1	DC	40	4.2.2 G4.2.6.	4.2.2 and 4.2.3 have been reworded to be clearer on the circumstances they apply to. Additional guidance has been added to G 4.2.11 to clarify this and that experience with the National CCS DRACAS may change this requirement in future to combat over- and under-reporting or disproportionate investigation efforts.
45	37	G 4.1.17	Propose to align timescales with 'Seventy-Two Hour Incident Review' hosted by Network Rail	A	3	DC	40	G 4.1.17	Agreed, 72 hours would align with Network Rail's Close Call requirements. The guidance has been changed to state that safety related (low risk) events are reported within 72 hours. Negligible risk events remain at 5 days, noting that this is only providing an example rather than stating a requirement. These are subject to change in future when the National CCS DRACAS is deployed.
197	38	G 4.2.6	This isn't consistent with 4.2.2. For example, if there is dubiety as to whether an event is negligible risk or low risk, G4.2.6 suggests that it is categorised as low risk ('the highest of the considered classifications', my italics). However 4.2.2 requires a high risk classification. I support G4.2.6 as it helps mitigate the risk in my comment on 4.2.2; G4.2.8 is appears to support this approach!	N/A	7	DC	41	G 4.2.6	Requirement 4.2.2 has been reworded to be clearer that this is only applicable when "it is not possible to confirm which risk classification is applicable for the failure symptom" rather than that there are two classifications to choose from because of multiple failure symptoms, which, as you note, is covered in G 4.2.8.
46	39	G 4.2.13	Does this also apply if demoted to 'not a failure' as per 4.5.3? Would the event remain logged in National DRACAS nonetheless? See also our comment 3.		3	NC	42	G 4.2.13	Yes, this would also apply in that circumstance. And yes, the event would, conceptually, remain logged in the National CCS DRACAS, even if determined to be not a failure. This is useful because: a) should new evidence be found later that there was an underlying issue, the record can be reopened; and b) trends in reporting things that are not failures can be monitored (which could for example, identify a need for additional training or improved guidance etc)

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47	39	G 4.2.16	What does one do with the result of this? What is a 'good' number?		3	NC	42	G 4.2.16	The hazard index (now indexes) have been included to help organisations priorities which CCS subsystem failure investigations to prioritise over others, particularly when multiple are being reported. This is based on feedback from train operators at the drafting review group which helped create the standard. This is only example guidance, based on Network Rail standards. G 4.2.16 onwards have been changed in the new draft based on other feedback received anyway. G 4.2.16 itself has been altered to note that the higher the number the higher the hazard and therefore priority, based on this comment. There is no 'good number' per se
198	39	G 4.2.17	Having a standardised approach to hazard rating is likely to positively contribute to the principles in section 1. I think strong consideration should be given to developing G4.2.17 onwards into requirements now. This doesn't prevent local systems using a different rating approach (in the spirit of G4.2.27).	N/A	7	NC	43	G 4.2.17	The hazard index equations shown in G 4.2.17 onwards, rather than being put into requirements, have been given their own guidance section which helps to highlight them in the body of the text. An additional example, based on a telecoms standard, has also been introduced as a second example. Feedback from the Drafting Review Group was to not make these ratings as requirements at this point. It is possible that in future, when the National CCS DRACAS is implemented, that they are made into requirements such that all events are treated in the same way by different organisations.
4	40	G 4.2.19	Why have a numeric value for Negligible Risk? If the risk is indeed Negligible then zero should suffice. The consequence factor will compound to give a value where applicable.		1	DC	44	G 4.2.24	Zero isn't used as this would mean all negligible risk events would be the same (zero) no matter the location, unless there is a realised consequence (which is unlikely from a negligible risk event). In the DRACAS, recording negligible risk events remains important and knowing how to prioritise between them could be important in future, particularly prioritising those in higher speed, higher service intensity areas where the risk from a failure is higher. In light of this comment, and having used some worked examples, the Negligible risk classification (N_{RC}) has been changed from 2 to 1.
48	40	G 4.2.20	e) is a more severe event than f).	G 4.2.20 f) should be demoted in NCF factor	3	NC	45	G 4.2.25	Agreed that e is more severe than f, albeit both are types of incidents which this factor is describing. The list in this part of the table align with those highlighted in RIDDOR as incidents.

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87	40	G 4.20.2	Fire and electrical arcing are not typically CCS system related albeit could relate to severe incidents. Is this intended to be fire caused by the CCS system failure?	Clarification on whether fire and electrical arcing are necessary examples for consequence factors.	4	NC	45	G 4.2.25	The list in this part of the table align with the situations highlighted in RIDDOR, and do not necessarily have to be caused by a CCS subsystem failure. For example, RIDDOR requires the reporting of "any fire seriously affecting the functioning of signalling equipment". If the fire has resulted in a CCS subsystem failure, this could be helpful to document in the National CCS DRACAS, even if the fire isn't directly caused by a the CCS subsystem. It is possible that a trend of fires could be identified, in which case, there may be an underlying issue with part of the CCS subsystem
170	41	G 4.2.24	Table goes across a page break which is messy		6	DC	44	G 4.2.24	Resolved in new version
199	42	4.3.1	The identifiers, and/or the process to determine them needs to be documented.	N/A	7	NC	47	4.3.1	For the national event identifier used in the National CCS DRACAS (covered in section 3), agreed. However, for local systems used by multiple organisations, this would be excessive and not required for the functioning of the National CCS DRACAS. Organisations are free to continue using their own identifiers or create their own in future. In time, the national event identifier may replace them.
200	43	4.4.1	There needs to be a qualifier about where relevant, as not all parameters may be relevant to a particular failure. Also there needs to be an acknowledgement that some criteria may have multiple entries (eg train identity), whereas others will have only one (eg reporting organisation). The following guidance does help, but there is scope to improve the requirement.	N/A	7	DC	48	4.4.1	Additional guidance has been added to G 4.4.5 to note "Certain fields may have multiple entries, for example train service identity, if more than one train service was affected by the CCS subsystem failure". All of the fields should be populated, or should be populable, for each failure event. Train service identity may be the only outlier, however recording "not applicable" or similar, may suffice and would meet the requirement.
135	43	G 4.3.2	Use of the agreed common language will reduce this risk	Add reference to the benefits of the common language into this clause (or another clause in this section)	5	NC	47	G 4.3.2	References to the use of a common language have been added to other sections of the standard, based on other comments. Adding this guidance in this section does not appear to be relevant as it is not related to unique event identifiers.
201	44	G 4.4.4	Standardising the way in which the event location is specified would significantly help data analysis, hopefully there is mutual support with the gazetteer research project?	N/A	7	NC	48	G 4.4.4	Agreed, however this would need to be considered as part of the National CCS DRACAS implementation. At this point, requiring a specific location referencing system may be too specific, with a system not designed yet. The gazetteer R&D project was not approved for development and is not in progress.

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49	44	G 4.4.4	Add time zone/UTC to 'reported date and time' and 'event date and time'. See also our comment 21.		3	DC	48	G 4.4.4	UTC has been added to both the reported and event data and time guidance.
136	44	G 4.4.4	Other useful elements of location data that are potentially available include: GPS and RBC location	Add GPS (lat / long), as well as the RBC location reference.	5	DC	49	G 4.4.4	"Global Navigation Satellite System (GNSS) coordinates" have been added to the event location information. This is more generic than GPS, which is a type of GNSS.
202	45	Table 8	'Train identity' doesn't reflect the arguments well presented in G3.4.13 and probably should.	N/A	7	DC	49	Table 8	Row changed to "train service identity" to avoid confusion with identity of a vehicle. Guidance from G 3.4.13 now abridged and included in this section (new G 4.4.11).
203	46	4.5	There needs to be guidance, possibly requirements on how assets are identified. There can sometimes be multiple ways of describing the same thing. The level of reporting (subsystem, assembly, component, etc.) also needs some consistency. Where relevant, hardware, firmware and software mod states also need to be prescribed.	N/A	7	NC	50	4.5	Agreed, this would be ideal and a significant enabler for the National CCS DRACAS. However, this is outside of the scope of this standard. The need for a national CCS asset management strategy has been recognised by the National CCS DRACAS roadmap project which should consider consistent reporting and the identification of assets.
171	46	4.5.2	If the outcome concludes that a CCS subsystem failure has occurred due to human factor how can item 'a)' be complied with?		6	NC	50	4.5.2	4.5.2 a) is documenting which CCS asset failed. If the failure is as a result of a human factor, this would be documented under "cause of failure" in 4.5.2 c)
50	46	G 4.5.3 b)	What about random failures?		3	NC	51	G 4.5.3 b)	Random failures are failures within the CCS subsystem so would not be updated to 'not a failure'. The System Model for the National CCS DRACAS notes that this kind of event may have a 'closed' investigation status with 'no corrective action identifiable'. This is subject to change when the National CCS DRACAS is implemented of course.
51	48	G 4.6.5	First use of term 'FRACAS'. Given that the RIS makes no effort to define the difference between 'FRACAS' (presumably in the definition of EN 50126-1?) and 'DRACAS' the sudden appearance of 'FRACAS' is a little odd.		3	DC	52	G 4.6.5	Agreed, FRACAS has been removed and replaced with "asset management software", in line with the rest of the standard.
52	49	4.7.2 b) and G 4.7.6	The term "operator" in 4.7.2.b is not the same thing as "organisations" used in the framed text of G.4.7.6.		3	DC	54	4.7.2 b) and G 4.7.6	Agreed, "operators" changed to "organisations"

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204	50	G 4.7.14	There are also reporting requirements that need to be referenced here in RIS-3350-TOM and RIS-8250-RST that could be relevant to CCS systems.	N/A	7	NC	55	G 4.7.14	References to RIS-3350-TOM and RIS-8250-RST are covered under G 4.8.22 and G 4.8.23 which notes the reporting requirements for different events. This would be duplicate guidance
172	53	4.9.1	Please see my comments for 3.9.2 and consider for this		6	DC	58	4.9.1	4.9.1 now aligns with updated clause 3.9.2, as per the cited comment
53	55	G 4.10.10 a)	See our comment 26.		3	NC	60	G 4.10.10 a)	The two examples of encryption are provided only as guidance and are not the only methods available, as noted at the end of the clause. They have been included as a result of initial feedback when writing the standard that as this is a new section not included in issue one, and that data security is increasingly important, examples to help organisations would be preferable.
138	55	G 4.10.9	Cyber on data storage.	Expand the cyber security requirements to the storage of the data in addition to the transmission.	5	DC	60	G 4.10.9	Agreed. G 4.10.9 has been altered to include "Storage in an unsecure manner can..." as well as transfer
54	58	A 1.1.1	Why are Crossrail CBTC, KVB and Chiltern ATP not included?		3	DC	63	A 1.1.1	CBTC and KVB have been introduced into Appendix A, albeit not completed at this point. Chiltern ATP was removed from this issue due to its immanent retirement.
55	58	A 1.1.1	RIS-0707-CCS issue 1 had clause A.1.1 which defined high risk/ low risk/negligible. Only the former two where classed as 'safety related'. This, in combination with its clause 1.1.2 meant failures classed as negligible risk did not need to be reported on.	Suggest either: Add this old classification scheme back in (old clause A.1.1) If 'negligible risk' is now to be reported on, then we suggest using a term different from 'negligible' to refer to this classification. ('negligible' suggests intentional neglect). A rationale as to why this has changed would be appreciated. We note that in the case of Table 14 and 15 'negligible' is used for performance-relevant events only. See our comment 8. What is the difference between 'low' and 'negligible' in this case (clause 4.1.7 suggests there isn't any)?	3	NC	63	A 1.1.1	The definitions for high, low and negligible risk previously shown in A.1.1 in issue one, are now in G 4.2.10; the section that has requirements on the application of risk classifications. This is cross-referenced in the new text in A.1.1. The definitions from issue one have not changed, with only high and low risk events being "safety related" as you describe. As described in the Concept of Operations, it is envisaged that all events, including negligible events would be recorded and, where required, reported to the National CCS DRACAS. This gives a better perspective of overall system performance, notwithstanding your separate comment on the inclusion of system performance (see separate response). As described in G 4.2.10, safety related (low risk) events increase risk to persons or the operational railway whereas negligible risk events do not directly increase this risk. (Assuming the reference is to G 4.1.17 rather than G 4.1.7) - this guidance on timelines to report to the National CCS DRACAS may be revised in future when the system is implemented - the current figures were developed by the Drafting Review Group and are only provided as an example. Based on

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									other feedback, safety related (low risk) events are reported sooner to align with Network Rail guidance.
145	58	A.1.1	Check to determine if the list of applications where CCS includes an interface between the trackside and onboard is complete.

Note: There is an issue on ECDP where the existing location of Eurobalise installed for Packet 44 purposes are not stored in a single location. If not identified, then these unlinked balises will cause ETCS trains to come to a stand due to the reading of an unexpected/unlinked balise. | Consider adding the following:

1. Eurobalise Packet 44 Applications include the following:
ASDO, CSDE, APCO, Cl390 ASDO, ATO, (TASS),

2. Hima Sella Tracklink applications include the following:
ASDO, CSDE, APCO

3.CBTC (as used on Crossrail – but includes operation on the GW and also on the GE into Stratford station) | 5 | DC | 63 | A.1.1 | CBTC and KVB have been introduced into Appendix A, albeit not completed at this point. Packet 44 and similar interfaces and applications have been ruled out of scope of this standard as they do not provide a CCS function. ATO will be added to the ETCS failure symptoms table once the ETCS baseline includes this function in the specification. |
| 205 | 58 | Appendi x B | As the clauses in this section are guidance, they need to be prefixed by 'G' | N/A | 7 | NC | N/A | N/A | Appendix B has been removed from the standard anyway. |

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56	58	Tables in Appendix A	To simplify this review and to facilitate future automated data entry we would consider it prudent to give every symptom a unique ID		3	NC	63	Tables in Appendix A	Interesting suggestion. This has not featured in previous issues, albeit AWS and TWPS have some legacy "code" numbers, e.g. code 3, code 5. It is possible that a unique ID created in this standard would not align with IDs already used in organisations and may create confusion, particularly where a "code" number doesn't match the ID number, for example TPWS code 16s. If symptoms are changed or altered over time, the numbering system could also become confusing, with numbers missed out. Unless there is an existing set of IDs that can be used?
88	60	Tables 10 and 11	Tables 10 and 11: For the majority of symptoms listed, the content is duplicated in both tables. To help reduce the content of the document, could tables 10 and 11 be combined, with certain symptoms (generally relating to the additional DMI voice messages of the enhanced system) being noted as applicable only to the enhanced system?		4	DC	65	Table 11	The two TPWS tables have been combined into a single table with a 'remarks' column added to highlight which symptoms are only applicable to enhanced TPWS.
139	61	Table 11	Please confirm what is meant by 'Enhanced onboard application of TPWS' is it a system compliant with the latest GM/RT8075?	Add clarification	5	DC	65	A.3.2	A definition of enhanced TPWS, a term used in RS522, has been added as guidance above the TPWS failure symptom table. Yes, this version of TPWS with the updated, 6 button and indication control panel, is the version compliant with the latest version of RIS-0775-CCS, which replaced GERT8075
5	61	Table 11 (Issue Record and other sections)	No definition is given for 'enhanced TPWS', 'enhanced onboard subsystem' or 'basic onboard subsystem'. This ambiguity is likely to increase further with introduction of further developments such as TPWS-CS, etc.	Include in definitions and introduce the term within the body of the standard. Suggested definitions: TPWS basic onboard subsystem – equipped with a TPWS DMI (control panel) comprising a single brake demand indicator; TPWS enhanced onboard subsystem – equipped with a TPWS DMI comprising separate indicators for SPAD, Overspeed and AWS brake demands, and TPWS audible alerts.	2	DC	65	A.3.2	A definition of enhanced TPWS, a term used in RS522, has been added as guidance above the TPWS failure symptom table. This version of TPWS with the updated, 6 button and indication control panel, is the version compliant with the latest version of RIS-0775-CCS, which replaced GERT8075
140	62	Table 12	Speed indication on the DMI reads lower than the actual train speed	Add this item as a High Risk	5	DC	67	Table 12	Symptom added as 'high risk'
57	64	Table 14	Third item: Propose to remove "rather than OS" – this could also be other Modes.		3	DC	70	Table 15	Removed text as suggested

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58	64	Table 14	"Runway movement": AWS/TPWS does not protect against this at all. What is the justification for only including it for ETCS and then making it 'high risk'?		3	DC	70	Table 15	Agreed, symptom removed
59	64	Table 14	"Loss of safe radio connection" – scenario unclear (before or after T_NVCONTACT?) How can the risk be determined without knowledge of the system reaction (which is defined by a national value)?		3	DC	70	Table 15	The safe radio connection is not linked to T_NVCONTACT, rather the Connection Status Timer which is set at 45s. An additional symptom has been added to encompass "Unable to establish safe radio connection".
60	64	Table 14	"Spurious Level Transition": ETCS level transitions are ordered by ETCS trackside to ETCS OBU. Level transitions shall be checked as part of system integration or ETCS System Compatibility (ESC) tests. Hence there should not be a possibility of spurious level transition on an operational network.		3	NC	70	Table 15	Agreed, this scenario is very unlikely to occur. This symptom is to cover things like: transition balises being installed in incorrect locations, odometry errors where the transition happens earlier based on the announcement, or inherent faults within the ETCS onboard.
61	64	Table 14	"Failure of / Spurious ETCS Mode transition": With mode transitions possible in different possible combinations triggered by trackside or on-board, 'failure' and 'spurious' leave room for interpretation.		3	NC	70	Table 15	These symptoms were included to incorporate the, admittedly unlikely, scenarios where the driver is reporting a) the mode should have changed but it didn't, and b) the mode changed in an expected area, went into a mode it shouldn't have done, or without any driver input or acknowledgement. The cause of this may be a trackside failure, however the unexpected mode change would be what is reported by the driver. Not sure what change is being suggested for this comment.
62	64	Table 14	"Trackside not compatible": ETCS trackside and ETCS OBU compatibility shall be tested as part of ESC. Hence there should not be a possibility of trackside not compatible error on an operational network.		3	NC	70	Table 15	Agreed, this is very unlikely to happen but is catering for a situation where a train has been incorrectly allocated to run over an incompatible route.
63	64	Table 14		"ETCS onboard fails to respond [to MA]": Propose to demote to 'negligible risk'.	3	DC	70	Table 15	Changed to negligible risk
64	64	Table 14	"Spurious ETCS trackside message": Trackside messages to OBU shall be tested as part of system integration or ESC tests. There should not be a possibility of ETCS trackside sending spurious messages by making unauthorized changes to RBC/balises.		3	DC	70	Table 15	Symptom removed as this is likely to be the cause of a failure rather than the failure symptom itself

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65	64	Table 14	"balise read error": All reasons come with some form of brake application. Why is this 'high risk'?		3	NC	70	Table 15	This was classified as high risk as there is a possibility that, for example, in SR mode, as you have no linking information, you may miss a Stop in SR message from a failed balise that can only be detected when linking information is available and the system status message is displayed as a result.
66	64	Table 14	"trackside malfunction": This scenario should have been considered in the trackside safety case and adequately addressed. Why is this 'high risk'?		3	DC	70	Table 15	Agreed, demoted to low risk rather than high as it is not a wrongside failure (under the assumption that the telegram is designed to fail safe).
67	64	Table 14		"no track description": propose to demote to 'negligible risk'.	3	DC	70	Table 15	Agreed, demoted to neg risk
68	64	Table 14	"… fails to initiate service/emergency brake": This is already covered by TI-1 in Subset-91 (part of ETCS core hazard)		3	NC	70	Table 15	Agreed that this is extremely unlikely to happen (and that it is in subset 091 as something to consider), but the tolerable rate is very low, not non-existent and therefore could occur. The symptom has been kept.
69	64	Table 14	"… fails to cut of traction power": This is already covered by TI-11 in Subset-91 (part of ETCS core hazard)		3	NC	70	Table 15	Agreed that this is extremely unlikely to happen (and that it is in subset 091 as something to consider), but the tolerable rate is very low, not non-existent and therefore could occur. The symptom has been kept.
70	64	Table 14	"fails to provide rollaway, reverse movement or standstill protection": AWS/TPWS does not protect against this at all. What is the justification for only including it for ETCS and then making it 'high risk'?		3	NC	70	Table 15	These are ETCS functions which could fail (and are not provided with TPWS as stated). As these are uncontrolled movements, this is a high risk wrongside failure, albeit unlikely to happen.
71	64	Table 14	"Spurious information on DMI screen / displays incorrectly / wrong information / incorrect train speed": This is already covered by Subset-91 as part of the ETCS auxiliary hazard.		3	NC	70	Table 15	Agreed that this is extremely unlikely to happen (and that it is in subset 091 as something to consider), but the tolerable rate is very low, not non-existent and therefore could occur. The symptom has been kept.
72	64	Table 14	How is "DMI fails to respond to driver input" a 'high risk' scenario?		3	DC	70	Table 15	The initial thinking was that this was related to the ETCS onboard freezing (or similar) - and as a different mode or level cannot be requested, this could be high risk. In retrospect, this would not meet the criteria for a high risk failure and has therefore been demoted to low risk, under the assumption that the train would be brought to a stand if the driver cannot respond to a required interaction
73	64	Table 14	"DMI fails to correctly respond […]": This is already covered by Subset-91 as part of the ETCS auxiliary hazard.		3	NC	70	Table 15	Agreed that this is extremely unlikely to happen (and that it is in subset 091 as something to consider), but the tolerable rate is very low, not non-existent and therefore could occur. The symptom has been kept.

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74	64	Table 14	"[name of NTC] not available": How is this a 'high risk' scenario given that the brakes would apply as per Subset-035, 10.3.3.4?		3	DC	70	Table 15	Agreed, demoted to low risk
75	64	Table 14	"[name of NTC] failed": How is this a 'high risk' scenario given that the brakes would apply as per Subset-035, 4.1.1.4?		3	DC	70	Table 15	Agreed, demoted to low risk
141	64	Table 14	Add additional errors that can arise in overlay areas	Add inconsistency between DMI and signal aspect; plus inconsistency between lineside speed board and DMI speed indication (for both PSRs and ESR/TSRs)	5	DC	70	Table 15	Two new failure symptoms have been added to incorporate a mismatch between lineside signals and the ETCS DMI: No Movement Authority past a lineside signal displaying a proceed aspect (Low risk) Full Supervision Movement Authority past a lineside signal displaying a red aspect (High risk) Re DMI speed indications, the circumstances should be covered under the "ETCS onboard supervises to an incorrect permissible or ceiling speed" symptom. This would cover both speeds that are not correct, mismatches between distances / TSR board locations, and for PSRs, TSRs and ESRs. Unboarded ESRs would be handled as today in overlay areas with the train brought to a stand at the preceding signal block
174	64	Table 14	ETCS DMI shows system status message: "runaway movement". I don't understand the risk level being 'High' if this is an incorrect operation?		6	DC	70	Table 15	Symptom removed as a result of other comments
175	64	Table 14	Check order of faults presented. Sequence is; brakes fail to operate then traction cut-off fails to operate. Then it is; fails to revoke traction cut-off then fails to revoke brake. Should this be a consistent arrangement of sequence?		6	DC	70	Table 15	Sequence of symptoms changed as suggested
176	65	Table 14	Spurious information on ETCS DMI screen. I would not know how to determine this had occurred. What is spurious information on a screen? The 3 faults immediately following this one are more definable.	Does this mean spurious 'operation' of the screen? i.e. flashing screen?	6	DC	70	Table 15	Agreed. Symptom removed as the symptom is most likely recorded as "DMI displays wrong information" (already in table)
177	65	Table 14	Consider addition of 'poor DMI display quality'?		6	NC	71	Table 15	This would be covered under 'ETCS DMI displays information incorrectly', in that it is not as it should be.

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178	65	Table 14	ETCS controls, separate from the ETCS DMI, fail to function. Wording of this is not good. Too generic and confusing. Easy to mis-read	If non-DMI controls are to be chosen then they need to be more specific to their function. E.g. ETCS reset button failed to function etc.	6	DC	71	Table 15	Comma has been removed to make this symptom easier to read. This is likely to be the ETCS acknowledge button. Other items such as the circuit breaker are covered by other symptoms
179	65	Table 14	ETCS onboard spuriously plays audible information. I would not know how to determine this had occurred. What is spurious audible information? The 3 faults immediately following this one are more definable.		6	DC	71	Table 15	Agreed. Changed to "ETCS Onboard play audible information when not required"
180	65	Table 14	ETCS onboard plays unintelligble audible information. If a single tone sound is provided can this be considered 'intelligible'? How will I know it is unintelligible?	Review wording. Consider simplifying to 'poor audio quality'?	6	DC	71	Table 15	Symptom changed to 'distorted or indiscernible information'
181	65	Table 14	ETCS onboard plays unintelligble audible information. Typo - intelligible		6	DC	71	Table 15	Word removed anyway based on other comments
184	65	Table 14	Noted that there is nothing specific for key management in either onboard or trackside lists.		6	NC	71	Table 15	A failure of the KMS would not be noticeable from the onboard / driver's perspective other than being unable to establish a communications session, which is covered under other symptoms. There is no DMI message for this failure mode. From the trackside perspective, the failure symptoms might include being unable to issue MAs, RBC failures etc. rather than anyone being able to see that the KMS has failed.
182	66	Table 14	Class B National Train Control system is not suppressed when ETCS is in operation. Subsequent faults in table refer to 'Level NTC' or 'NTC'	Review wording and use of abbreviations for consistency	6	DC	72	Table 15	Wording changed to be consistent (NTC system), with National Train Control defined on first use with acronym.
183	66	Table 14	ETCS DMI shows system status message: "[name of NTC] failed". It is not clear why this is considered high risk? Unless the NTC system is considered not to fail-safe?		6	DC	72	Table 15	Agreed. Demoted to low risk in line with other comments on this symptom
76	66	Table 15	"Trackside sends spurious message": Trackside messages to OBU shall be tested as part of system integration or ESC tests. There should not be a possibility of ETCS trackside sending spurious messages by making unauthorized changes to RBC/balises.		3	DC	72	Table 16	Agreed, symptom removed

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77	66	Table 15	What is an "all train stop command" – an unconditional emergency stop?		3	DC	72	Table 16	Agreed, and changed to "ETCS trackside fails to issue a command to stop trains" to incorporate conditional and unconditional emergency stops. Wording for "spurious emergency stop" also changed to mirror this new wording
78	66	Table 15	"Trackside fails to send text message"	Propose to remove as this is a special case of "fails to communicate a […] packet"	3	DC	72	Table 16	Agreed, symptom removed
79	67	Table 15	"balise incorrectly located": Balise linking, i.e., correct locations of balises to be expected by ETCS OBU shall be tested as part of system integration or ESC tests. Unlinked balises or temporary balises like Temporary Speed Restriction balises could be incorrectly located. Unauthorized placement/ removal/relocation of unlinked balise groups on an operational network shall be prevented.		3	DC	73	Table 16	Agreed. This symptom has been removed as this is a failure cause, not a symptom. It has been replaced with "ETCS balise missing" to cover scenarios where, for example, a balise has not been put back after maintenance work.
173	68	Table 16 (A8)	Item: Onboard trip-cock equipment indicated as having failed – It is not clear how this indication works. Are there are two modes of failure for this? Fail safe and fail unsafe? If so, then there are two risk levels.		6	NC	73	Table 16	There is an indication to the driver that the unit has failed and is therefore low risk. A high risk failure would be a failure that is not indicated to the driver and would be recorded as the first symptom in table 16 (Train-stop function not activated when fitted signal at danger or where provided as a speed trap function - High risk)
142	69	Table 17	TCAID units should be included in this section	TCAIDs to be added	5	NC	75	Table 18	The TCAID is part of the train detection infrastructure and so is already covered. A TCAID equipment fault is a cause of a train detection system failure in the same way as a relay fault would be. The TCAID is designed to detect the electromagnetic characteristics of the TCA equipment fitted to the train. It would not be a symptom in itself but could be the cause of the failure.
143	70	Table 18	Loss of comms	Add loss of comms as a failure mode	5	DC	76	Table 19	Symptom added as 'low risk'

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1	71	A.11	This table by it's nature has contradictions and conflicts. Many of the symptoms overlap, in my opinion it should focus on the Cause – the fault (not the failure). E.g. Driver unable to establish call with signal box = Low Risk…, but why? let's say a base station has failed, no driver can contact any SB, no REC can be made so now it's High Risk.	Refocus the table towards why the event occurred, then the risk can be definitive. Ideally the ultimate table should align to NR/L3/TEL/40047. Any fault that could result in a REC failing to reach all applicable parties is High risk. Would the other tables work better if they worked on the Fault not the failure?	1	NC	77	A.11	The GSM-R failure symptom table mirrors that used in issue one. Tables in this standard are only designed to consider CCS subsystem failures, not the cause of them or faults or defects - this would be extremely challenging to be exhaustive. This standard helps establish aligned failure symptom reporting across organisations and not instruct or guide duty holders on possible causes. Any specific contradictions that have been identified would be welcomed as feedback for the 12-month review. In your example, being unable to establish a REC would be recorded as a high risk event (second row in the table from a driver's perspective, fifteenth row for signaller). As you rightly state in your proposed text, "any fault that could result in a REC failing to reach all applicable parties is High risk" - agreed; but this is a high risk fault, with the failure symptom being that a REC cannot be established. Appreciating that this is subtle wording and hence why the National CCS DRACAS needs to consider faults and defects as well as failures.
144	71	Table 19	Unintended Railway Emergency Call	May be higher risk to the railway as a whole because all trains in the area are stopped. Results in overcrowding on platforms as well as potential trips/falls on trains where the emergency brake has applied.	5	NC	77	Table 19	Secondary risks have not been included into the establishment of the risk classifications in the Appendix A tables. High risk failures are akin to wrong-side failures which an unintended REC would not fall in to.
206	74	Appendix B	Contains a mine of relevant information that underpins the rest of the standard, yet there is only one reference to it in the body of the standard (in G 3.3.15) – I think we're underselling it and the introductory guidance (part 2) should be expended to include more context for the appendix (following on from the text in G 2.1.3, for example).	N/A	7	DC	N/A	N/A	Appendix B.3 has been removed as this information is found in the Concept of Operations and System Model report. Appendix B.1 and B.2 have been moved into Part 2 based on other comments around needing an easier to understand overview of the DRACAS process earlier in the document.
146	74	Appendix B	Although it is useful to have a summary of the ConOps document, including it here creates the risk that if the ConOps is updated, that this RIS would need to be consulted and updated.	Consider making reference to the ConOps only.	5	DC	N/A	N/A	Appendix B.3 has been removed as this information is found in the Concept of Operations and System Model report. Appendix B.1 and B.2 have been moved into Part 2 based on other comments around needing an easier to understand overview of the DRACAS process earlier in the document.

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207	75	B.3.2	Figures 7 and 8 refer to continuation in the "Sentencing Panel" diagram. As you might expect, I have some reservations on nomenclature without further context, but this diagram is not included, nor is there any qualification or reference to it not being shown. Some expansion of the introductory text, between B.3.2 and B.3.3, would help.	N/A	7	DC	N/A	N/A	Appendix B.3 has been removed as this information is found in the Concept of Operations and System Model report. Appendix B.1 and B.2 have been moved into Part 2 based on other comments around needing an easier to understand overview of the DRACAS process earlier in the document.
21	82	Definitions (General)	Document is missing definitions on data retention / data deletion policies.		3	NC	81	Definitions (General)	Neither of these terms or related policies were referred to in the standard and therefore are not included in the definitions. Guidance provided in sections 3.10 and 4.10 refer to ISO 27001 which contains useful guidance on this issue for organisations, if required. At this point, it is not known how long the National CCS DRACAS would retain information for - it may well retain information permanently.
208	86	Definitions	'Vehicle identity' – suggest this is replaced with GB operational number (as defined in RIS-2453-RST, or alternatively another identifier consistent with RIS-2453-RST)	N/A	7	DC	85	Definitions	Vehicle identity has been replaced in the Definitions section as well as G 4.4.4 with: class identifier, EVN, GB Operational Number (TOPS), rail vehicle identification number and set number (all of which are now in the definitions)
209	65	Appendix A	Failure symptoms that have "when required" are not clear which standard or requirements they refer to		8	DC	65	Appendix A	New guidance has been added to the TPWS, ETCS, TASS and Mechanical Trainstop sections to say that "the term 'when required' refers to conformity with the requirements in XXX standard".