

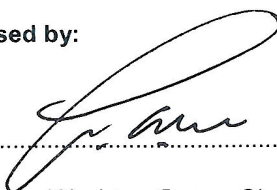
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Issue:	1
Date:	1 June 2012
Compliance date:	16 September 2012

Level 3

Management Of Safety Related Reports For Telecoms Failures Appendix

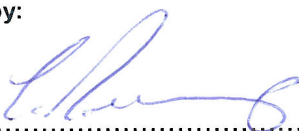
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Published and Issued by Network Rail, Kings Place, 90 York Way, London. N1 9AG.



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User information

This Network Rail standard contains colour-coding according to the following Red–Amber–Green classification.

Red requirements – *No deviations, could stop the railway*

- **Red requirements shall** always be complied with and achieved.
- Red requirements shall be presented in a red box **with the word “shall” or expressed as a direct instruction**.
- Accountability for the efficacy of red requirements lies with the Professional Head/Standard Owner.
- Red requirements are monitored for compliance.
- Corrective actions shall be enforced if deviations are discovered through functional checks (e.g. engineering verification visits, audit or Operations Self-Assurance).

Amber requirements – *Controlled deviations, approved risk analysis and mitigation*

- **Amber requirements shall** be complied with unless deviation has been approved in advance.
- Amber requirements shall be presented with an amber sidebar **and with the word “shall” or expressed as a direct instruction**.
- Accountability for the efficacy of these requirements lies with the Professional Head/Standard Owner, or their nominated Delegated Authority.
- Amber requirements are monitored for compliance.
- Deviations **may** be permitted. Deviations are approved by the Standard Owner or through existing Delegated Authority arrangements.
- Corrective actions shall be enforced if **non-approved** deviations are discovered through functional checks (e.g. engineering verification visits, audit or Operations Self-Assurance).

Green – *Guidance*

- Guidance is based on good practice. Guidance represents supporting information to help achieve **Red** and **Amber** requirements.
- Guidance shall be presented with a dotted green sidebar **and with the word “should” (usually in notes) or as a direct instruction**.
- Guidance is **not mandatory** and is not monitored for compliance.
- Alternative solutions may be used. Alternative solutions do not need to be formally approved.
- Decisions made by a competent person to use alternative solutions should be backed up by appropriate evidence or documentation.

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Issue record

Issue	Date	Comments
1	June 2012	Transfer of NR/L2/TEL/30047 Issue 5 appendix to this issue.

Compliance

This Network Rail standard is mandatory and shall be complied with by Network Rail and its contractors if applicable from 16 September 2012.

When this standard is implemented, it is permissible for all projects that have formally completed GRIP Stage 3 (Option Selection) to continue to comply with the issue of any relevant Network Rail standards current when GRIP Stage 3 was completed and not to comply with requirements contained herein, unless stipulated otherwise in the scope of this standard.

Reference documentation

Reference	Title
GE/RT8047	Reporting of Safety Related Information
GE/RT8106	Management of Safety Related Control, Command and Signalling (CCS) System Failures
GK/RT0210	Asset Management for the Safety of Signalling and Operational Telecommunication Systems and Equipment
NR/GN/TEL/10117	Competence Management Systems for work on Control & Communication Systems
NR/L2/INV/002	Accident and Incident Reporting and Investigation
NR/L2/SIG/10047	Management Of Safety Related Reports For Signalling & Telecoms Failures
NR/L2/SIG/19811	FMS for Network Rail Fault Management
NR/L3/TEL/0023	Management of SINCS Records for Telecoms Assets
NR/SP/TEL/31001	Telecommunication Maintenance Testing and Failure Investigation

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1 Purpose

This document contains the hazard index system of safety related failures of telecommunications equipment and services, owned by Network Rail or provided by third parties for railway operational purposes.

The hazard index system directly relates to NR/L2/SIG/10047.

2 Scope

This document specifies the hazard index system for the management of safety related reports for all telecommunications failures for equipment and services provided by Network Rail Company or third parties (including bought in equipment or services).

Where Network Rail agrees to manage equipment not belonging to Network Rail or away from Network Rail infrastructure, the arrangements described in this document shall also be applied to such equipment.

This specification meets the requirements of Group Standard [GE/RT8106](#).

3 Definitions

Accident Unplanned, uncontrolled event giving rise to death, injury, ill health, damage or other loss.

Audible Crosstalk When a conversation on a circuit can be overheard on another circuit which could result in a person overhearing an instruction which they believe was given to them.

Control, Command and Signalling System Systems used for authorising and safeguarding the safe operation of trains, and communication systems provided for safety purposes in the direct operation of the railway. (GE/RT8106)

Failure Unplanned situation that arises when a system does not perform as intended.

Failure Rating (F) The allocation of a numerical number in the range between 0 and 5 which indicates the level of risk imported into the operation of the railway as a result of the failure occurring, including the adjustment factor as defined in table 2.

Faint Line A line where the speech volume is of such a low level that there is difficulty in hearing clearly what the other person on the line is saying.

FMS Fault Management System, a national failure recording system (or suite of interconnected systems) for the recording and analysis of failures.

Fundamental Cause A primary deficiency or prevailing condition which permitted a direct act, omission or equipment fault to lead to a failure.

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Hazard	The potential to do harm, including ill health and injury; damage to property, plant, products or the environment; production losses or increased liabilities.
Hazard Index	Index of possible events linked to a numerate method of indicating the scale of Hazard applicable to any Failure or Incident.
High Risk	The effect of a failure of equipment where no other part of the control, command and signalling system provides acceptable protection. (GE/RT8106)
ICC	Integrated Control Centre
Incident	Unplanned event which increases risk, or causes death, injury, ill health, damage or other loss; where signalling malfunction cannot be ruled out as contributory factor or cause (includes misunderstanding of equipment by user leading to incident)
Incident Rating (I)	This indicates the seriousness of any incident arising from a situation where malfunction of operational telecommunication equipment cannot be ruled out as a contributory factor or cause. The default value shall be 0. The incident ratings are defined in table 1
Incorrect..... (display, label, description)	A display or description that appears wrong to the system user because it has characters missing, contains extra characters or the numbers and digits are in such an order that the information is meaningless.
Location Rating (L)	For all telecommunication failures and incidents the Location rating shall be fixed at 5.
Low Risk	The effect of a failure of signal or telecommunications equipment where an acceptable level of protection is maintained (by the control, command and signalling system or by procedures) even though safety is degraded by the failure. (GE/RT8106)
Maintainer	The organisation responsible for the day to day maintenance or Route Asset Management (or equivalent) of the Signalling equipment or systems.
Negligible Risk	The effect of a failure of signalling or telecommunications equipment that does not directly increase the risk to persons or the operational railway. (GE/RT8106)
Negligible Non Op Risk	All signalling & telecoms failures which do not fall into any of the other risk categories. Applies to all assets operating outside of design parameters and does not fail. Includes failures identified by condition monitoring. (EXAMPLE- First filament failure or slow moving points)

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Noisy Line / Circuit	A circuit on which there is audible interference. This takes the form of a hum, buzzing sound (includes noise caused by electric traction and that of short duration), or crackle. The levels of noise render the speech unintelligible so as to prevent hearing clearly what the other party on the line is saying. Also applies to noise and interference on radio systems.
Not A Fault Risk	All signalling & telecoms failures which are Not A fault.
ORR	Office of Rail Regulation
Period	For the purpose of this specification, this shall be four weeks as defined by Network Rail.
Positive But Wrong	A display or description that appears to the system user to be correct but is in fact incorrect, all letters and/or digits are present and in the correct order to provide a meaningful display or indication that is misleading and could be acted upon.
RAIB	Rail Accident Investigation Branch.
Reviewer	Principal Asset Performance Specialist (SP&C) (or a delegated representative) not involved in the day to day maintenance of the infrastructure and able to take an overview of Signalling & Telecoms failure management.
RIDDOR	Reporting of Injuries, Diseases & Dangerous Occurrences Regulations.
Service Provider	A Signalling and/or Telecommunications group responsible for providing services as defined by the customer.
Station	For the purpose of this specification, A railway station to which members of the public have access, and where:- a) Over 50% of the length of the platform is situated in a tunnel or within or under any building. - or b) Over 50% of the length of the platform has a roof or ceiling which is adjacent or below the level surface of the ground adjacent to any exit from the station.
Signalling Equipment and systems	Network Rail's control and communications systems used to control the safe passage of trains and provide information as to train location associated with, for example: Signal and point equipment, level crossing control and protection equipment, train describers, axle box detectors, axle counters, track circuits and their associated control systems.
SINCS	Signalling Incident System - A national system within FMS for the recording and analysis of high and low risk failures, Signalling & Telecoms wrong side failures and incidents. Should SINCS be replaced by a new system, with similar functionality, at some time in the future, any reference in this document to SINCS shall be deemed to refer to the new system from its commissioning.

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SRTF Safety Related Telecommunications Failure. A failure which reduces the protection normally provided by the Telecoms infrastructure and increases the risk of an Incident.

Switched Direct Line A circuit that appears to the user to be a dedicated line between two locations, but uses a switched network to establish the call as required, when the user initiates a call

Telephone Providing Sole Protection A telephone which provides the only protection for a member of the public to cross safely the running line by direct communication with the control centre for the section of line concerned. This includes: Occupation, Accommodation, User Worked and Bridle Way crossings.

TMT and FIH Telecoms Maintenance Testing and Failure Investigation Handbook.

TFI Guide Telecoms Failure Investigation Guide.

TMT (Test) Plan Telecoms Maintenance Test Plan.

4 Safety Management System Responsibilities

4.1 The Integrated Control Centre shall:

4.1.1

Where there is insufficient information to determine whether the 'as-reported' failure constitutes an SRTF; check that a SINCS record is only created, by applying the Hazard Index system, when enough detail has been obtained.

4.1.2

Where details of the 'as reported' failure indicate a possible SRTF then the initial coding for the risk rating shall be limited to Low and the failure rating shall be restricted to a maximum of 2, unless it is clearly a High Risk failure when the appropriate coding shall be applied.

4.1.3

Check that an incident record is created in SINCS via FMS where telecommunications equipment malfunction cannot be ruled out as a contributory factor or cause of an incident. This includes misunderstanding of equipment by an operator leading to an incident.

4.1.4

Include the initial risk classification applied to the failure in the information passed when advising the front line maintenance staff / contractors' fault control of a failure.

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4.1.5

Record all details of Test Plans used by technicians for the investigation and resolution of failures in the failure record. This information shall, as a minimum, comprise the plan number and any steps omitted from the investigation. Any additional information, such as the serial number of the technicians' written test slip or the steps omitted from the plan, shall be requested if not proffered.

4.2 The Maintainer (Stage 1) shall:

4.2.1

Check, and arrange for amendment where necessary, that all information and actions required for the closure of an SRTF is available and recorded correctly in the SRTF record. This shall include, but is not limited to, a check for:

- Discipline
- System identification
- Equipment type
- Failure details, cause and actions taken
- Site specific details
- Risk classification
- Location Rating
- Failure Rating
- Incident Rating
- Adjustment factors
- Recommendations
- Test Plan and Failure Investigation Guide details

4.2.2

Check, and obtain where necessary, the reference applicable to the SRTF classification (Appendix A) and the TFI guide number(s) and Test Plan(s) used for investigation of the failure (including any steps which have been omitted) are recorded in the SRTF record.

4.2.3

Check that all telecoms service and system failures and incidents have been fully investigated liaising, where necessary, with other Telecommunication Engineers, Engineers within other disciplines and other maintainers where joint responsibilities arise. Involve experts or independent parties where appropriate.

The Maintainer shall be responsible for completion of the SRTF record. Check that all findings, recommendations, investigations and actions that could reasonably be taken to prevent re-occurrence are recorded. Possible actions considered but rejected shall be recorded together with the reason for rejection.

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4.2.4

Where a telecoms circuit or service has caused or cannot be ruled out as a contributory factor of a system failure within another discipline, check that the relevant maintainer assists where possible, with the investigation and makes recommendations with respect to the telecoms system.

The information shall be reported to the relevant discipline who shall be responsible for the correlation and reporting of all recommendations. Such investigations and failures shall not constitute an SRTF but may be subject to review by another discipline.

4.2.5

Where it becomes necessary to add further information at a later date into the notes field of a record, this shall be done by adding additional lines of input correctly dated. The information shall be added within three working days of it becoming available.

4.2.6

Monitor for trends and undertake action, if required.

Establish local projects to address recurring causes of failures, where appropriate. Each project shall have an action plan. Reference shall be made to the action plan in each related SRTF record. One SRTF record shall be designated as the master record for the action plan and shall be used to track the progress and findings of the action plan. This record shall remain open with the Maintainer and details of the plan notified to the Reviewer.

Any subsequent SRTF records created with the same failure cause may be closed, with the addition of a note detailing the reference numbers of both the master record.

4.2.7

The target for closure shall be that, at the end of each period defined by Network Rail, the number of SRTF records open at Maintainer level shall not exceed the total number opened in the previous three completed periods.

4.2.8

Undertake a quarterly (minimum) review of all SRTF records open at Maintainer level for greater than 28 days. Check that any actions and investigations being undertaken by the Maintainer are being progressed. Details of the review and the reasons for the lack of progress shall be added to a note in the record. If, after the third review, no progress has been made with the investigation, no progress is likely to be made with the investigation and no further occurrence of the failure has occurred then the record may be closed 'as-is' with the prior agreement of the Reviewer. A note shall be appended to this effect in the record.

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4.2.9

Where a record has been returned from the Reviewer to the Maintainer, for whatever reason, there shall be no further amendment of previous Notes fields. Information in the Details, Cause or Immediate Actions Taken fields may be added to or amended providing that a note to this effect is appended to the record. This is so that an auditable record of change exists and any decisions made are justifiable given the information available at the time.

4.2.10

Bring to the Reviewer's attention any records and local projects that the Maintainer believes or suspects may have a national implication.

4.2.11

Provide the Reviewer with access to or copies of, as required, all reports, test results and inquiry findings.

4.2.12

Initiate safety and/or remedial action for failures on equipment owned or managed by third-parties as required. Causes of such failures shall be investigated as far as is possible

4.2.13

Undertake an independent check of each FMS failure record assigned a Negligible risk classification to check that it has the correct classification assigned

4.2.14

Undertake a quarterly (minimum) review of all records open at Maintainer level for greater than 28 days.

4.3 Stage 2 – The Reviewer (Network Rail Centre) shall:

4.3.1

During the quarterly (Minimum) review of all records open at reviewer level for more than 28 days, check that information and actions required for SRTF investigations are being progressed. Details of the review and the reasons for the lack of closure shall be added to a note in the record.

4.3.2

The reviewer's initials shall be included in the notes field along with the reason for the return, when returning records to the maintainer for further information.

4.3.3

Initiate remedial advice to any other parties that may require details of the failure, in order to avoid reoccurrence.

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4.3.4

Undertake a sample review of those records which are closed at Maintainer level.

4.3.5

When Undertaking the 'Data Quality Check' of each Integrated Control Centre analyse the faults inputted into FMS at each Control over a period of approximately one month, checking that each failure analysed has been assigned its correct Risk, Failure or Incident Rating and Adjustment factors where applicable

The following information, as a minimum, shall be collated during the Data Quality Check:

- Total Number of Telecoms Faults entered into FMS.
- Number of SRTFs identified by the Control (e.g. Not Negligible Risk).
- Number of Low Risk SRTFs identified by the Control.
- Number of High Risk SRTFs identified by the Control.
- Number of High Risk failures which actually occurred.

The outcome of the Data Quality Check shall be shared with manager of the Control concerned.

4.3.6

Monitor High Risk and Low Risk statistics.

4.3.7

For every national action plan open there shall be at least one SINCS record open which will hold the details of the plan and its progress. This SINCS record shall remain open with the Reviewer until all actions in the plan have been completed.