



RIS-3780-TOM issue 2

Operational requirements for GSM-R radio

Background

GSM-R is a national system for voice radio used principally, but not exclusively, for communication between train drivers and signallers. To achieve a safe and efficient operation, there is a need to standardise the operational use of the system.

What is it about?

RIS-3780-TOM contains requirements and guidance for the development of contingency plans to manage failures of the GSM-R voice system. Furthermore, the document defines requirements and guidance relating to the use of the train radio to or from a moving train. During the creation of issue one, a new safety risk model, the GSM-R Failure Risk Model, was developed. It took into account the safety risk of various mitigation options for failures of GSM-R cab equipment and the GSM-R fixed network. These are:

- The immediate risk of a train accident as a result of the train being in traffic but being unable to originate or receive a railway Emergency Group Call (REC); and
- The secondary risks, such as the effects that cancellations of trains bring, with crowding at stations and problems with extra boarding and alighting.

As a result of this work, principles were developed to underpin the contingency arrangements defined to deal with failures of GSM-R on-board train radio equipment.

What has changed?

The original risk model has been expanded to assess the benefits of an additional mitigation

measure. The changes introduced by this revision to the standard allow railway undertakings to use a competent person in a non-leading cab to operate the GSM-R radio in an emergency if the radio in the leading cab of a train fails. This optional mitigation measure can be used when portable equipment or a hand-portable device is not available.

In addition, the document was subject to a complete editorial review updating requirements to address the entity responsible.

What are the benefits?

The extra mitigation measure provided will assist railway undertakings in complying with their legal obligations in case of a radio defect.

Where portable equipment or a hand-portable device is not immediately available, the provision of a competent person in the non-leading cab will allow trains to remain in service when they would have previously not been able to. This is estimated to have the potential to reduce some GSM-R-related delays, with an estimated benefit of £491,606 to the industry over 5 years. In addition, the editorial changes applied to the structure of the document will assist transport operators and users of the standard to clearly identify requirements and guidance.

Who is it for?

Railway undertakings will be able to update their contingency plans to incorporate this extra mitigation measure.

Transport operators will benefit from the clearer structure of the document following the editorial review.