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Guidance on Operational Criteria for the Provision of Lineside Telephony
Following GSM-R Introduction
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Guidance on Operational Criteria for the Provision of Lineside Telephony Following GSM-R Introduction

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This Rail Industry Guidance Note does not supersede any other Railway Group documents.

Supply

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Part 1 Introduction

1.1 Purpose of this document

- 1.1.1 The widespread introduction of GSM-R, reducing reliance on signal post and other lineside telephones, has prompted a review of the provision of fixed lineside telephony. Recognising the technological advances of introducing GSM-R and the potential operational benefits in safety and performance terms, opportunities exist to reduce the provision of lineside telephony. This document therefore gives guidance to the infrastructure manager and railway undertakings on criteria that should be considered when deciding on the provision of lineside telephony following GSM-R introduction. It does not constitute a recommended method of meeting any set of mandatory requirements.
- 1.1.2 In conjunction with this guidance a risk assessment tool has been produced to assist duty holders in reaching costed appraisal of the safety and performance benefits and disbenefits of providing or removing lineside telephony. The CBA tool in support of this guidance note can be downloaded from the RSSB Rail Risk Portal at: www.safetyriskmodel.co.uk.

1.2 Background

- 1.2.1 RSSB research project T629 Replacement of Fixed Lineside Telecommunications Infrastructure with Radio Solutions was published in 2007. The Phase 1 report explored the specific uses of lineside communications, and concluded that some 32,412 lineside telephones of all kinds were in use. Of this total, 3,237 were located at level crossings and were effectively excluded from further consideration, as it was concluded these would remain in place because of routine or emergency use (according to crossing type) by members of the public as crossing users. An extensive review of Railway Group and Network Rail Company Standards was also undertaken, examining their relevance to lineside telephones for operational use, legacy radio systems or GSM-R. In addition to signal post and location telephones, due consideration was given to lineside telephones provided in relation to electrification systems and communication with electrical control rooms, and emergency tunnel telephones provided for use by fire brigade personnel.
- 1.2.2 The subsequent T629 Phase 2 report, also published in 2007, set out to quantify the usefulness of different types of lineside communication, and to compare the capability and capacity of the GSM-R system to supersede some or all of these fixed telephone functions, both as cab-fitted for use by drivers and hand portable for use by track workers or operations staff such as mobile operations managers. A risk analysis and replacement model was produced, which provided a rationale for removal of some lineside telephones. The completed research study identified interesting comparisons between roles performed by different forms of lineside telephony, establishing that some systems are better than others at doing their job. Frequency of use varied significantly depending on the type of system, the purpose for which the telephones were provided and the location. Fitness for purpose and perceived reliability were two other factors considered in the research study, with the observation that telephone failure (either singly or as a sub-system) might not be apparent until someone needed to use it in earnest. In seeking the most objective means of making a judgement on the utility of different types of lineside telephone and the suitability for replacement by GSM-R, the Phase 2 report concluded that selective withdrawal of some lineside telephones provided for operational purposes would be unlikely to increase risk.
- 1.2.3 The research model considered existing and planned telecommunications systems for use by drivers, signallers and trackside staff in communicating with each other, and subjected them to a risk assessment and analysis exercise. A review of other European railways' experiences and strategies was also undertaken for lineside telephones and radio based systems. The model then considered: