

AUDIENCE:

TOC/FOC

X

Drivers

X

Signallers

X

Control Office

X

This bulletin is aimed at TOC/FOC /Drivers/Signallers and Control representatives and is provided as briefing information and action as appropriate.

Introduction

An intermittent problem has been identified in certain areas on the GB Railway where trains at starting locations are sometimes unable to register due to the cab mobile continually displaying “Searching networks, Please wait”. This can be as a consequence of interference from public mobile phone transmitters affecting the GSM-R cab mobile reception, and may not be a defective cab radio. At such locations the driver may not be able to determine whether the cab mobile is defective or working correctly but affected by interference. Therefore, a process is needed to allow trains to continue in service.

Reminder: If GSM-R GB is displayed and the cab mobile just fails to register, this is not classed as a defective radio (refer to Bulletin 21).

Purpose

This Bulletin has been produced to allow trains to enter service displaying “Searching networks, Please wait” at defined locations, whilst remedial measures are put in place to overcome public mobile interference problems. The locations will be defined by Network Rail Telecoms (NRT) following site investigation, and published in local instructions until the permanent solution is in place.

Explanation

The design of the GSM-R network provides a series of 'cells' that cover all of the UK rail route, designed with a degree of overlap. Complete failure of a base station will usually lead to an area where GSM-R coverage will not be available. When it can no longer see the GSM-R network at sufficient signal strength, the cab radio will display “Searching networks, Please wait”. As all equipment is centrally monitored, Network Rail are able to advise when these failures occur and the area affected and drivers would be made aware either before registering or when contacting the signaller.

Scenario: Network Rail has encountered some circumstances where strong interference from public GSM mobile operator sites is causing GSM-R cab radios to lose contact with the GSM-R base station designed to cover the location. A symptom of this interference is the cab radio displaying “Searching networks, Please wait”. This effect is generally constrained to a small area and can sporadically happen at locations where drivers are required to register for example. This is harder for the central management centre to detect and is more dependent on fault reports initiated by drivers. This affect is sporadic as it requires the public mobile system to be managing many calls, such as may happen during times of rail disruption.

Network Rail is working with the public mobile operators on this issue and has agreement for short term reductions in site power output as mitigation. The longer term solution is usually for changes to the GSM-R line side infrastructure to be made. This can require a new site to be installed and commissioned so the solution will not be immediate and may take several months to deploy.

Guidance for Signallers and Drivers

Network Rail will incorporate known locations affected by public mobile interference, as described in the scenario above, into local instructions and the following guidance is given to signallers and drivers:

- If the cab radio fails to find the GSM-R GB network in an area that normally has coverage, the driver should first try to establish whether there is a network problem at the location by contacting the signaller, (if not already informed by operator control or in a broadcast).
- If it is established that the GSM-R GB network has no reported faults and the trains is at a location where registration is required, on instruction from the Signaller the driver should complete a “Pending registration”. (Once GSM-R coverage is regained, the cab radio will automatically register the details entered).
- The Signaller should advise the driver, based on the local instructions, the location at which the cab radio should regain the GSM-R network and the cab radio automatically registers. The train may enter service under these conditions without “GSM-R GB” displayed on the drivers control panel.
- If GSMR network coverage has not been re-gained by the location stated in the local instructions, indicated by “GSM-R-GB” on the display, then the cab radio must be considered as defective and the train should be managed as shown in section 24 of Rule Book Module TW5.