

Ref:	NR/L2/TEL/30135
Issue:	Issue 3
Date:	6 March 2010
Compliance date:	6 March 2010



Level 2

Technical Requirements for Security CCTV Systems on Network Rail Infrastructure

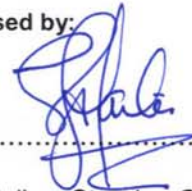
Endorsement and Authorisation

Endorsed by:



Richard Feasby, Working Group Chair

Authorised by:



Steve Hailes, Steering Group Chair

Accepted for issue by:



Mick McManus, National Standards Manager

This document is the property of Network Rail. It shall not be reproduced in whole or part nor disclosed to a third party without the written permission of Network Rail.

© Copyright 2010 Network Rail.

Uncontrolled copy once printed from its electronic source.

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

Ref:	NR/L2/TEL/30135
Issue:	Issue 3
Date:	6 March 2010
Compliance date:	6 March 2010

Issue record

Issue	Date	Comments
1	October 2007	First Issue
2	August 2008	Updated to reflect Phase 2A reorganisation
3	March 2010	Updated to reflect Engineering reorganisation

Reference documentation

GE/RT8037, *Signal positioning and visibility*

GI/RT7016, *Interface between station platforms, track and trains*

GT/TDINT100, *Earthing and equipotential bonding of telecommunications equipment*

NR/GN/TEL/50017, *CCTV for stations - Functional, technical and operational requirements*

NR/L2/EBM/029, *Product introduction and change*

NR/L2/TEL/30025, *Standby power supply requirements for operational telecommunications equipment*

NR/SP/ELP/21085, *Specification for design of earthing & bonding systems for 25 kV a.c. electrical lines*

TD/GEN096, *Telecommunications requirements for general and emergency use at sub surface stations*

Compliance

This Network Rail standard is mandatory and shall be complied with by Network Rail and its contractors if applicable from 6 March 2010.

When this standard is implemented, it is permissible for all projects that have formally completed GRIP Stage 4 to continue to comply with the Issue of any relevant Network Rail Standards current when GRIP Stage 4 was reached and not to comply with requirements contained herein, unless the designated Standard Owner has stipulated otherwise in the accompanying Briefing Note.

Disclaimer

In issuing this document for its stated purpose, Network Rail makes no warranties, express or implied, that compliance with all or any documents it issues is sufficient on its own to ensure safe systems of work or operation. Users are reminded of their own duties under health and safety legislation.

Supply

Copies of documents are available electronically, within Network Rail's organisation. Hard copies of this document may be available to Network Rail people on request to

Ref:	NR/L2/TEL/30135
Issue:	Issue 3
Date:	6 March 2010
Compliance date:	6 March 2010

the relevant controlled publication distributor. Other organisations may obtain copies of this document from IHS. Tel: 01344 328039.

Document shared on 03/27/2016 21:46:20 MDT

Ref:	NR/L2/TEL/30135
Issue:	Issue 3
Date:	6 March 2010
Compliance date:	6 March 2010

Contents

1	Purpose.....	5
2	Scope.....	5
3	Definitions	5
4	CCTV System Requirements	7
5	Design Requirements.....	16
6	Designing For Section 12 Stations.....	19
7	Installation Requirements.....	19

.....

Ref:	NR/L2/TEL/30135
Issue:	Issue 3
Date:	6 March 2010
Compliance date:	6 March 2010

1 Purpose

This specification details Network Rail's requirement to provide high quality CCTV systems in order to improve passenger safety and to combat crime, terrorism and disorder.

This specification is supported by [NR/GN/TEL/50017](#) - CCTV for Stations - Functional, Technical and Operational Requirements which provides guidance on providing CCTV systems on stations.

2 Scope

This standard sets out the requirements for the design and installation of CCTV systems and equipment provided on Network Rail's infrastructure i.e. stations, station car parks depots, lineside and Network Rail offices.

This standard does not detail any CCTV coverage requirements; guidance on CCTV coverage requirements are provided in [NR/GN/TEL/50017](#) - CCTV for Stations - Functional, Technical and Operational Requirements.

This standard does not define any requirements for the design and installation of Driver Only Operation (DOO) CCTV systems.

3 Definitions

AFFL

Above Finished Floor Level

AGC

Automatic Gain Control

BST

British Summer Time

BTP

British Transport Police`

CCD Camera

A camera type using charge coupled device technology

CCTV

Closed Circuit Television

CIF

Common Intermediate Format is a resolution definition as described in ITU-T video codec standard H.261.

CRT Monitor

A monitor using Cathode Ray Tube technology

Ref:	NR/L2/TEL/30135
Issue:	Issue 3
Date:	6 March 2010
Compliance date:	6 March 2010

DIT

Manufacturer of alarm systems called Data Information Technology

ELV

Extra Low Voltage

GUI

Graphical User Interface

GMT

Greenwich Mean Time

IP

Internet Protocol

NR PE

Network Rail Project Engineer

NTP

Network Terminating Point

OLE

Overhead Line Equipment

PIN

Personnel Identification number

POE

Power Over Ethernet

PSDB

Police Scientific Development Branch

PTZ

Pan, Tilt, Zoom

TOC

Train Operating Company

TFT Monitor

A flat screen monitor using Thin Film Transistor technology

UPS

Uninterruptible Power Supply

ZHLS

Zero Halogen Low Smoke

Ref:	NR/L2/TEL/30135
Issue:	Issue 3
Date:	6 March 2010
Compliance date:	6 March 2010

4 CCTV System Requirements

The following sections detail the overall system requirements for a CCTV system being installed on Network Rail's infrastructure.

All CCTV systems shall comply with the mandatory TRANSEC CCTV system requirements. The guidance note [NR/GN/TEL/50017 - CCTV for Stations - Functional, Technical and Operational Requirements](#) provides details on the current mandatory, CCTV system requirements.

4.1 Product Approval

All equipment that forms part of a security CCTV system shall have Network Rail product approval as defined by [NR/L2/EBM/029 Product Introduction and Change](#).

4.2 System Requirements

New CCTV systems shall use analogue cameras linked to an A to D codec using IP based connectivity unless analogue cameras are not available or incompatible with the current system, at which point digital IP cameras may be used with the agreement of the sponsor.

4.2.1 Resolution

New CCTV systems shall have a minimum resolution of 2CIF (704 × 288).

4.2.2 Remote Access

CCTV systems shall be capable of being accessed remotely for viewing live images where specified as being required by the sponsor.

4.2.3 IP Addresses

Where IP based connectivity is being used Network Rail shall allocate the IP addresses of all equipment forming part of CCTV system.

4.3 Selection of Cameras

CCTV systems shall consist of primarily fixed cameras however some PTZ cameras may be used in locations with pro-active monitoring as approved by the NR PE.

Cameras may be fixed type, dome type or PTZ; all cameras shall comply with the following requirements.

- a) Cameras shall be colour CCD using a ½" to ¼" sensor with a horizontal resolution of 470TV lines (or better) and a signal to noise ratio of 48dB (or better).
- b) The camera shall produce 30% video with an F1.2 lens using AGC alone at 0.8 lux (or less).

Ref:	NR/L2/TEL/30135
Issue:	Issue 3
Date:	6 March 2010
Compliance date:	6 March 2010

- c) Cameras shall utilise Digital Signal Processing techniques with backlight compensation, selectable white spot control and shutter.
- d) Camera settings available for adjustment shall include iris lens level, shutter, backlight compensation, gamma and AGC.
- e) The camera shall have an operating temperature range of between -10 and +50°C.
- f) Cameras shall meet the requirements of EN50121-4
- g) Specialist cameras with advance video processing techniques may be considered where shadowing and sunlight causes viewing difficulties however these techniques shall not be used as an alternative to lighting upgrades.
- h) External cameras shall include a demisting heater to maintain a constant internal temperature unless otherwise stated as not being required by the NR PE.
- i) Where possible new CCTV camera shall be Extra Low Voltage (ELV) type (12VDC/24VAC).

Alternative camera types and techniques may be considered if deemed suitable for example specialist units, however as a minimum all cameras shall meet the requirements stated above.

4.3.1 Dome Type Cameras

Where dome cameras are to be used they shall:

- a) be a fully functional dome camera with colour camera module (or colour/mono switching) providing variable speed, continuous rotation pan and auto flip 180° Flip;
- b) have an ingress protection to IP43 for internal use and IP55 for external use;
- c) have a number of mounting options including but not limited to wall, ceiling and pole mounted;
- d) be fully compatible with the selected camera control unit using standard telemetry protocols such as RS485, 422 or IP;
- e) have a privacy zone masking function where it is possible to view beyond the boundary of the rail station in which they are installed;

4.3.1.1

Dome cameras may use clear or tinted type dome however the reduced low light performance in the hours of darkness when using tinted covers shall be considered during the design.