



**TS 04989:2.0**  
T MU SY 10001 ST  
**Standard**

# **Public Transport Closed Circuit Television Functional Requirements Standard**

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1.0	27/10/2022	Renumbered as TS 04989:1.0. Version recommenced in line with new designation. Changes to previous content include updates in technology and industry requirements.
2.0	19/02/2025	Changes to previous content include minor updates to requirements and clarification of language.

## Preface

This standard is a first issue as TS 04989:2.0 and supersedes TS 04989:1.0 *Public Transport Closed Circuit Television Functional Requirements Standard*.

This document has been developed to underpin the consistent and accountable implementation of CCTV in public transport facilities across NSW to meet operational imperatives in the most fiscally responsible manner. In applying the document, the operational need for CCTV in public transport settings is increasingly an important consideration. Non-security uses for CCTV can include operational management activities, insurance and legal claim management, and broader non-security risk management and assurance activities.

This document provides detailed guidance and clarity of baseline requirements for system designers and contractors, and supports compliance evaluation by contract managers.

This document has been prepared by the AMB and the Enterprise Security Strategy and Assurance team (Enterprise Security) of the Enterprise Security, Crisis and Emergency Management (ESEM) Branch in consultation with representatives from across TfNSW.

Transport for NSW, through Enterprise Security, are consulted during any security risk assessment process to ensure that counter terrorism needs have been considered.

Transport for NSW is the NSW Government department responsible for improving the customer experience, planning, program administration, policy, regulation, procuring transport services, infrastructure, and freight. Transport operating agencies such as Sydney Trains and NSW Trains, as well as private operators such as Transdev Sydney Ferries, private bus operators, and the light rail operator focus on service delivery – providing safe, reliable, clean, and efficient transport services.

Transport operators carry out their activities subject to a range of laws, regulations, and conditions, including accreditation and a safety management system (SMS). Part of a SMS is a security plan, based on a security risk assessment that identifies a range of security risks and outlines mitigations to reduce or eliminate these security risks. CCTV is one of a range of mitigations that can contribute to the security environment, and help improve the customer experience when using the transport network.

Change to previous content includes minor updates to requirements and clarification of language.

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# 1 Scope

This standard sets out baseline requirements for the design, installation, and configuration of CCTV used in all public transport applications in NSW including onboard systems on trains, ferries, buses, metro and light rail.

Baseline requirements set out in this document are the minimum requirements for the design, installation, and configuration of CCTV used in public transport high risk and critical infrastructure applications in NSW.

This document does not apply to TfNSW corporate offices and Roads and Motorways facilities as the relevant standards or technical specifications need to be referred to. For motorways and tunnels, refer to TS 06319, TS 06320 and TS 06225.03. However, this document can be used to inform best practice in regard to these assets.

This document does not address cyber security, except in so far as physical security is required to protect physical (hardware) information and communications technology infrastructure. For cyber security requirements refer to TS 04990, TS 04991, ISO/IEC 27001:2022 and AS IEC 62443 (series).

# 2 Application

This document sets out base-line requirements for the concept, design, installation, and operation of CCTV applicable to new static and onboard installations of CCTV used by bus, rail, ferry, metro and light rail operators in NSW, where video, still images or metadata from the CCTV system may be used for operational purposes, or to support an investigation or prosecution, or to manage risk. This can include, but is not limited to, the ability to provide live CCTV feeds to the Transport Management Centre or the Police Operations Centre as required. This document is not required to be applied retrospectively.

This document is intended to provide minimum requirements for:

- security managers, asset managers, system delivery partners
- decision makers in bus, heavy rail, ferry, and light rail operations
- authorised staff from TfNSW who evaluate compliance
- respective agencies, contract managers and regulators.

TfNSW requires that security measures adopted, including CCTV, be interoperable with other systems. As with other security measures, the extent to which CCTV is applied needs to be proportionate to the risk.

This document should be read in conjunction with the mode specific technical CCTV requirement standards such as TS 03994, TS 04089 *and* TS 00050.

### 3 Referenced documents

The following documents are cited in the text. For dated references, only the cited edition applies. For undated references, the latest edition of the referenced document applies. Refer to appendix A for documents that have not been referenced in this document directly, but offer additional context for CCTV requirements.

#### International standards

AS IEC 62443 (series) *Industrial communication networks – Network and system security*

ISO/IEC 27001:2022 *Information security, cybersecurity and privacy protection – Information security management systems – Requirements*

#### Australian standards

AS/CA S009 *Installation Requirements for Customer Cabling (Wiring Rules) AS/NZS 3000 Electrical installations – Wiring Rules*

AS/ISO 31000 *Risk Management – Guidelines*

AS/NZS 62676.4 *Video surveillance systems for use in security applications – Part 4: Application guidelines (IEC 62676-4:2014, MOD)*

#### Transport for NSW standards

TS 00050 *Video Surveillance System Architecture*

TS 03994 *Surveillance Systems for Heavy Rail Vehicles*

TS 04089 *Surveillance Systems for Light Rail Vehicles*

TS 04990 *Cybersecurity for IACS – Overview*

TS 04991 *Cybersecurity for IACS – Baseline Technical Cybersecurity System Requirements and Countermeasures*

TS 04992 *Surface Transport Fixed Infrastructure Physical Security Standard* (This document is not publicly available. To obtain access email [standards@transport.nsw.gov.au](mailto:standards@transport.nsw.gov.au))

TS 04992:1.0 *Surface Transport Fixed Infrastructure Physical Security Standard* (This document is not publicly available. To obtain access email [standards@transport.nsw.gov.au](mailto:standards@transport.nsw.gov.au))

TS 06225.03 (IC-DC-TS912) *Motorway Systems – Traffic Management and Control System*

TS 06319 (RMS 17.167) *Smart motorway design guide – Traffic monitoring and surveillance*

TS 06320 (RMS 17.168) *Smart motorway design guide – Tunnel traffic management*

#### Legislation

*Privacy and Personal Information Protection (PPIP) Act 1998 (NSW)*

*Security Industry Act 1997 (NSW)*

*Surveillance Devices Act 2007 (NSW)*

Surveillance Devices Regulation 2022 (NSW)

Workplace Surveillance Act 2005 (NSW).

## 4 Terms, definitions and abbreviations

**AI** artificial intelligence

**AMB** Asset Management Branch

**AO** activity observation

**application** levels of coverage which varies based upon view of interest and coverage standard required, however, through minimum technical requirements applicable to all levels to ensure fit for purpose video

**CCTV** closed circuit television

**connectivity** the ability of the CCTV system to support authorised connections from external systems or devices for the purpose of displaying live or recorded video

**ESCEM** Enterprise Security, Crisis and Emergency Management branch

**FI** face identification

**FR** face recognition

**IPS** images per second

**LEAN** least equipment applicable and necessary

**NPR** number plate recognition

**ONVIF** Open Network Video Interface Forum

**open architecture** is the capacity to accommodate adding, upgrading and swapping components, without technical or trade constraints related to proprietary systems or technology

**PD** presence detection

**SA** situation awareness

**SMS** Safety Management System

**system delivery partner** all third party vendors providing planning, design, supply, installation, commissioning and review of the CCTV system including consultants carrying out risk assessments

**TfNSW** Transport for NSW

**view of interest** is that part of an image (camera field of view) within which the functional requirements apply

## 5 Introduction

CCTV is a system for monitoring, recording, and retrieving video to carry out the following functions:

- meet regulatory requirements and statutory obligations
- aid incident response and operational decisions
- assist emergency services
- monitor or manage passenger flows and activity
- deter or detect crime (including terrorist activity)
- support investigations
- provide evidence for criminal or civil proceedings
- monitor or manage vehicle or vessel movement.

Transport owners and operators are responsible for continuous review of CCTV system integrity, security, procedural efficiency, and methods of operation; including the gathering, retention, and release of data and ensuring that CCTV installation is compliant with applicable Commonwealth, State, and local government legislation. Such legislation includes privacy related considerations, in accordance with the *Privacy and Personal Information Protection (PPIP) Act 1998* (NSW), and surveillance related requirements stated in the *Surveillance Devices Act 2007* (NSW), *Surveillance Devices Regulation 2022* (NSW) and the *Workplace Surveillance Act 2005* (NSW).

CCTV systems are widely used across heavy rail, bus, ferry, and light rail networks, and have historically been designed and engineered around mode-specific standards and technical requirements.

A security risk assessment in accordance with Section 7.1 of TS 04992.1.0, and under the guidance of AS ISO 31000 shall be taken into account in the design phase to determine what the security risks are for a particular transport mode or facility. This risk-based approach will determine what the minimum baseline requirements are for the design, installation and configuration of CCTV systems required for a specific transport mode or facility. Such a security risk assessment shall consider the prevailing threat environment and address any assessed vulnerabilities, particularly where sites include or are close to critical infrastructure and places of mass gathering. In addition, the use of artificial intelligence to achieve the minimum requirements stated in this document and as appropriate according to the security risk assessment is supported.

## 6 Closed circuit television system requirements

### 6.1 General

This section provides CCTV system requirements. These requirements are based on the following guiding principles for the application of CCTV:

- operational needs shall be addressed (CCTV) and investment geared to business outcomes
- the number of cameras is not an accurate measure of the level or adequacy of CCTV coverage
- the least amount of equipment shall be used to achieve the nominated functional requirements; referred to as the LEAN approach (least equipment appropriate and necessary)
- the CCTV system and associated outputs shall be resilient to failures and incorporate redundancy measures
- the amount of equipment needed to achieve functional requirements can be affected by installation constraints, budget constraints, and the emergence of new technologies.

Functional requirements are the combination of application, including image resolution, monitoring frame rate, and recording frame rate.

Justifications for use of additional cameras where a single camera may be expected to address multiple views of interest shall be addressed in the security risk assessment process prior to investment decisions being taken.

### 6.2 Clear and operationally useful video

The CCTV system shall deliver clear and operationally useful video with a high degree of colour fidelity in all environmental conditions, by day and by night, which are reasonably anticipated for the installation locations and views of interest.

An operationally useful video contains live and recorded images from the CCTV system that are fit for purpose and not impacted by any environmental or technical influence.

### 6.3 Open architecture

The CCTV system shall employ an open secure architecture. The CCTV system shall be capable of integrating with other electronic security technologies installed at the site or operationally related to the site, to facilitate rapid validation or assessment of a detected event. The use of AI analytics within CCTV systems should be considered to support this capability.

Examples may include motion detection sensors, alarms, suspicious object recognition or help points.

## 6.4 Interoperability

Interoperability is the ability of CCTV system components to be connected to, controlled by, and have access to live or recorded video via authorised CCTV components in the same or connected CCTV system.

The CCTV system design and any subsequent modifications to the design shall maintain interoperability with existing CCTV infrastructure and connectivity with third parties as required. Connectivity is the ability of the of CCTV system to support authorised connections from external systems or devices for the purpose of displaying live or recorded video.

Such interoperability shall deliver quality live and recorded video fit for the application which enables operators to interpret situations and make informed decisions.

ONVIF provide and promote standardised interfaces for effective interoperability. CCTV equipment shall be sourced from manufacturers who comply with the ONVIF specification or higher which provide greater flexibility for future system expansion and component replacement without getting locked to a single vendor.

## 6.5 Least equipment applicable and necessary

The CCTV system design shall use only the LEAN to support the specified functional requirements. The type of equipment needed shall be assessed during the design phase of the system based on the identified risk and coverage to monitor that risk.

For example, where a single camera with suitable performance specifications, lens, and strategic positioning is able to support multiple views of interest at the applicable resolutions and frame rates, whilst meeting the security risk assessed objectives for the nominated applications, a single camera shall be used.

## 6.6 Application objectives and resolution

The CCTV system shall provide video fit for the application specified in the functional requirements for the installation.

Table 1 provides requirements for objectives and resolution. The applications listed in Table 1 will apply equally to either an operational or security context-based need.

Video is fit for the application where it meets the objectives specified in Table 1 and the object in a view of interest is at a resolution greater than or equal to that nominated in Table 1.

**Table 1 – Application objectives and resolution**

<b>Application</b>	<b>Objective</b>	<b>Object</b>	<b>Min. pixels (v)</b>
Face identification (FI)	Use the video or still image for positive identification of an individual, for the purposes of supporting an investigation or prosecution. Given a comparative image of equal quality of a known individual, identification shall be beyond reasonable doubt.	Face	80
Face recognition (FR)	Use of the video or still image to support recognition of an individual for the purposes of supporting an investigation. A viewer of the image can say with a high degree of certainty that the individual is, or is not, someone they have seen before.	Face	40
Activity observation (AO)	Use of the video to observe, with a high degree of reliability, the nature of the activity within the field of view.	Person	200
Presence detection (PD)	Use of the video to establish, with a high degree of certainty, the number, direction and speed of movement of people (or vehicles) within the field of view.	Person	120
Situational awareness (SA)	Use of the video to monitor an area to maintain awareness of operational conditions and possible activity requiring further attention.	Person	48
Number plate recognition (NPR)	Use of the video or still image to accurately identify, with a high degree of certainty, all characters on a vehicle number plate.	Number plate characters	30

## 6.7 Recording

The CCTV system shall be capable of maximising the number, quality, and duration of stored video while minimising video file size. The CCTV system shall transmit recorded imagery if required over limited communication networks without compromising picture quality or transmission frame rate.

The CCTV system shall be capable of recording and transmitting images of a specific CCTV camera at a live view where possible or higher view of recording frequency on the initiation of an operator, or automatically when an alarm input is detected.

The range in each band enables operators with differing operational requirements to consider cost-benefit needs whilst still achieving compliance.

Video from the cameras shall be recorded at a frequency greater than or equal to the range nominated in Table 2 in accordance with the recording frequency specified in the functional requirements for the view of interest.

**Table 2 – Recording frequency**

<b>Recording frequency</b>	<b>Images per second per camera</b>
Low	4
Medium	5 to 12
High	13 to 24
Very high	25 +

## **6.8 Video storage and retention**

Video storage capacity shall be supplied and configured to accommodate the resolution and recording frequency specified for each view of interest, with sufficient capacity to retain and retrieve the footage as specified for the installation or for a period greater than or equal to 31 days.

Additional secondary storage of data may be considered for critical or high-risk locations if required.

Staggered retention of recorded frame rates, image resolution, or compression may be applied to recorded video after a period greater than or equal to 72 hours, where such use is compatible with regulatory and operational requirements.

Staggered retention is the process of incrementally removing images from video at defined periods of time after initial recording in order to reduce the retained recording frequency to reduce storage requirements (for example, initial recording at 12 IPS may be reduced to 6 IPS after 31 days).

## **6.9 Retrieval, playback and preservation**

It shall be possible within the retention period to efficiently retrieve and play back recorded video from any camera on the CCTV system and preserve that video at the maximum available recording frequency for further review beyond the retention period.

## **6.10 Camera installation**

Unless otherwise specified, all aspects of the CCTV camera placement shall comply with the applicable sections of AS/NZS 62676.4. This includes provision of appropriate safety fixings and access space at camera locations.

Cameras shall be installed in a safe and resilient manner in locations to deliver the specified functional requirements. Wherever practicable, cameras shall be located to support multiple views of interest from the one camera.

Cameras shall be located and installed in a manner that reduces the opportunity for animal, bird, or insect nesting, accidental damage, vandalism, or use as an aid for climbing, yet facilitates expedient access for routine cleaning, minor maintenance, service, and repair.

CCTV cameras shall be located so as to ensure the field of view is not blocked due to any environmental or scene specific construction. For example, foliage, street furniture, signage, or other construction.

Cameras shall not be mounted within any applicable safety clearance zone such as the danger zone found inside the rail corridor. Wherever practicable, fields of view should include other cameras to capture any tampering or vandalism, but need to ensure camera eyes are not captured within that field of view.

Camera locations shall be selected to eliminate any degradation of the image through artificial lighting, weather, or environmental factors, such as glare from light fittings or morning and afternoon sun patterns, or in areas subject to vibrations.

The camera location shall be chosen to meet functional requirements. The camera location shall not be unduly influenced by the ease of installation or by the aesthetic of design.

## **6.11 Camera housings**

Unless otherwise specified, all aspects of the camera housings selected shall comply with the applicable sections of AS/NZS 62676.4 and AS/NZS 3000.

All cameras proposed for installation shall be of a vandal resistant design, providing protection from external environmental influences that can cause damage whether accidental or deliberate.

The installation of cameras within housings shall not degrade the quality of the image, nor obscure any of the field of view from the camera.

Camera housings shall be selected with due regard for the intended operating environment, such as in a marine or salt water context, in a high traffic context, or where required, with a higher degree of fire or blast resistance.

Camera housings shall be physically numbered to support operations, maintenance, and review objectives. Camera numbers shall be placed to be clearly visible without entering into unsafe areas.

## 6.12 Closed circuit television system installation

Unless otherwise specified, all aspects of the CCTV system installation shall comply with the applicable sections of AS/NZS 62676.4 and AS/NZS 3000.

Cameras and related equipment shall be installed in accordance with all applicable standards published by the AMB and as informed by the security risk assessment.

Cabling, cable support and containment systems, interconnections and associated equipment shall be installed in accordance with AS/CA S009 and AS/NZS 3000, in an organised manner that is consistent with manufacturer's recommendations for optimal performance and reduces the opportunity for damage or vandalism. The installation shall comply with all additional requirements as specified by the owner or operator of the infrastructure.

## 6.13 Monitoring

The CCTV system may be supervised by personnel in monitoring centres designed for any combination of managing transport operations, security, or policing functions. The CCTV system shall be capable of displaying high quality video from selected cameras anywhere on the network for active monitoring by authorised operators. The quality of the video displayed shall be such that it enables operators to meet the objectives for the application applicable to the selected cameras. See Table 1 for further details of the application objectives.

The display of video from the CCTV system shall be able to be arranged by authorised operators in accordance with operational requirements. For example, live video from a single selected camera on one monitor with any combination of video from other cameras displayed in an array of tiles on another monitor. It shall be possible to play back recorded video on a monitor while continuing to view live video from the CCTV system.

The CCTV system shall incorporate alarm inputs, which when triggered, reliably alerts operators to operational conditions triggered by switches or detectors. The activation of any alarm input shall be able to initiate the display of video from one or more cameras on nominated monitors for immediate attention by operators.

The CCTV system shall have the capacity to incorporate mapping and related graphical displays that enable the identification of the location of an alarm activation and potential views available from the adjacent CCTV cameras.

The CCTV system shall have the capability to incorporate video analytics using algorithms or AI designed to reliably alert operators to specific anomalies within the field of view of nominated cameras. The analytics applicable to any camera shall comply with the capability of the CCTV system.

Picture quality shall be able to be optimised through the operator interface.

## 6.14 Maintenance

To ensure the CCTV system provides optimal results throughout its life cycle, a maintenance program for both preventive and corrective maintenance in accordance with AS/NZS 62676.4 shall be incorporated.

## 6.15 Signage

The asset owner or operator or maintainer shall ensure signs notifying people that they might be under CCTV surveillance in that place are clearly visible in accordance with TS 04992.

## 6.16 Licences

In compliance with TS 04992 and the *Security Industry Act 1997 (NSW)*, an appropriate licence is required for persons involved in the design, sale, installation, or maintenance of a security system including CCTV system. The service delivery partner shall provide copies of all relevant and current licencing documents prior to commencing any work.

# 7 Functional requirements – general

## 7.1 General

Functional requirements are the combination of application (including image resolution), monitoring frame rate, and recording frame rate.

This section details the general functional requirements for CCTV across all transport facilities including heavy rail, light rail, metro, buses, ferries, interchanges, stations, wharves, and stops.

Stabling and marshalling locations, depots, maintenance facilities and level crossings are also included.

In addition to the functional requirements given in Section 7.1 and Section 7.2, the operator shall be guided by the recommendations of the security risk assessment to inform the design of the CCTV system. This section shall be read in conjunction with TS 03994, TS 04089 and TS 00050.

## 7.2 Recording frequency

Where the one camera serves multiple views of interest at the required application and the required recording frequency varies between views of interest, the higher recording frequency shall be used.

## 7.3 Base coverage standard

All transport facilities designated as requiring base CCTV coverage shall have CCTV systems that meet the functional requirements specified in Table 3. Transport facilities include trains, buses, metro, ferries, light rail, interchanges, stations, wharves, and light rail stops, as well as stabling and marshalling locations, depots, and maintenance facilities. See Table 1 for application objectives. See table 2 for recording frequency.

**Table 3 – Functional requirements: Base coverage**

<b>View of interest</b>	<b>Application</b>	<b>Recording frequency</b>
Persons entering a transport facility	FR	High
Persons exiting transport facility	AO	High
Persons entering pedestrian tunnels	FR	Medium
Persons using pedestrian tunnels	AO	Low
Persons using ticket vending or smartcard ticketing (Opal) machines	AO	Medium
Persons using pedestal ticket readers	AO	High
Persons making purchases via staff	FR	Medium
Persons in high activity circulation areas	AO	Medium
Persons using and in the vicinity of emergency help points	AO	Medium
Persons entering passenger waiting rooms and areas (external view)	FR	Low
Persons within passenger waiting rooms and areas	PD	Low
Persons exiting a passenger lift or waiting at landing	PD	Medium
Persons within passenger lifts and the floor area	FR	Medium
Persons using bicycle parking facilities	AO	Medium
Persons using designated car park pedestrian entries and exits	AO	Medium
Vehicles entering and exiting car parks at designated entries and exits	NPR	High
Bins in publicly accessible areas	AO	Medium
Publicly accessible seating areas	AO	Medium

## 8 Functional requirements – context specific

### 8.1 General

This section details the functional requirements for CCTV that are context specific in terms of area and coverage standard level. Operators shall determine through a comprehensive risk assessment whether the context is focused on meeting either an operational or security capability gap before applying the relevant coverage standard.

The coverage standards listed in Table 4 for transport facilities may be applied equally to interchanges, railway stations, wharves, and light rail stops because the CCTV functional requirements are the same.

Where there is doubt on the application of the functional requirements, further guidance shall be sought from the Enterprise Security team or authorised agency representatives as given in TS 04992.

**Table 4 – Coverage standard for specific rail station category**

TS 04992 Station Categories	Coverage standard
A city	3
B major	3
C suburban	2
D community	1
E outer urban	baseline

### 8.2 Transport facility – coverage standard 1

The CCTV system shall, for transport facilities designated as coverage standard 1, meet the functional requirements specified in Table 5.

**Table 5 – Transport facility coverage standard 1: Functional requirements**

View of interest	Application	Recording frequency
Persons entering interchange, railway station, wharf, light rail stop	FR	High
Persons exiting interchange, railway station, wharf, light rail stop	AO	High
Persons at ticket barrier or gate array and immediate vicinity	AO	Medium
Persons making purchases via staff	FR	Medium

<b>View of interest</b>	<b>Application</b>	<b>Recording frequency</b>
Persons using pedestal ticket readers	AO	Medium
Persons exiting a passenger lift or waiting at landing	PD	Medium
Persons exiting or loitering at toilet entrance or exit door	FR	Medium
Persons within passenger lifts and the floor area	FR	Medium
Persons using ticket vending or smartcard ticketing machines (such as Opal)	AO	Medium
Persons using and in the vicinity of emergency help points	FR	Medium
Persons in high activity circulation areas	AO	Medium
Persons entering pedestrian tunnels	FR	Medium
Persons using pedestrian tunnels	AO	Medium

The CCTV system shall, for platform areas of railway stations, wharves, light rail stops designated as coverage standard 1, meet the functional requirements specified in Table 6.

**Table 6 – Platform area coverage standard 1: Functional requirements**

<b>View of interest</b>	<b>Application</b>	<b>Recording frequency</b>
Persons entering passenger waiting rooms (external view)	FR	Low
Persons within passenger waiting rooms	PD	Low
Persons on turn back platforms	SA	Low
Persons in the vicinity of platform ends (underground)	AO	High
Persons in the vicinity of platform ends (above ground)	SA	High
Persons on train crew change over platform areas	PD	Medium

The CCTV system shall, for multi-level and at-grade commuter carparks of interchanges, railway stations, wharves, and light rail stops designated as coverage standard 1, meet the functional requirements specified in Table 7.

**Table 7 – Commuter car parks (multi-level and at-grade functional requirements: Coverage standard 1**

<b>View of interest</b>	<b>Application</b>	<b>Recording frequency</b>
Persons using designated car park pedestrian entries and exits	AO	Medium
Vehicles entering and exiting car parks at designated entries and exits	NPR	High

The CCTV system shall, for interchange areas of railway stations, wharves, light rail stops designated as coverage standard 1, meet the functional requirements specified in Table 8.

**Table 8 – Interchange areas coverage standard 1: Functional requirements**

<b>View of interest</b>	<b>Application</b>	<b>Recording frequency</b>
Persons at TfNSW bus stop waiting areas	PD	Medium
Persons using bicycle parking facilities	AO	Medium

### 8.3 Transport facility – coverage standard 2

The CCTV system shall, for interchanges, railway stations, wharves, and light rail stops designated as coverage standard 2, meet the functional requirements specified in Table 9.

**Table 9 – Transport facility functional requirements: Coverage standard 2**

<b>View of interest</b>	<b>Application</b>	<b>Recording frequency</b>
Persons entering interchange, railway station, wharves, light rail stops	FR	High
Persons exiting interchange, railway station, wharves, light rail stops	AO	High
Persons entering through ticket barrier or gate array	FI	High
Persons exiting through ticket barrier or gate array	FI	High
Persons using pedestal ticket readers	AO	Medium
Persons in the immediate vicinity of ticket barriers or gate arrays	AO	Medium
Persons making purchases via staff	FR	Medium
Persons entering at the top of stairwells and escalators	AO	Medium
Persons stepping off escalators and stairs	AO	High
Persons using stairwells and escalators	PD	Low
Persons using ramps	PD	Low
Persons entering pedestrian tunnels	FR	Medium
Persons using pedestrian tunnels	AO	Medium
Persons using pedestrian bridges	AO	Low
Persons exiting a passenger lift or waiting at landing	PD	Medium

<b>View of interest</b>	<b>Application</b>	<b>Recording frequency</b>
Persons within passenger lifts and the floor area	FR	Medium
Persons exiting or loitering at toilet entrance, exit door	FR	Medium
Persons using ticket vending or smartcard ticketing (such as Opal) machines	AO	Medium
Persons using and in the vicinity of emergency help points	FR	Medium
Persons entering rail corridor tunnel portals	SA	High
Persons in concourse areas	SA	Medium
Persons in the vicinity of public telephones	SA	Medium
Persons in high activity circulation areas	AO	Medium
Persons entering and exiting control rooms	AO	Medium

The CCTV system shall, for platform areas of railway stations, wharves, light rail stops designated as coverage standard 2, meet the functional requirements specified in Table 10.

**Table 10 – Platform area functional requirements: Coverage standard 2**

<b>View of interest</b>	<b>Application</b>	<b>Recording frequency</b>
Persons entering passenger waiting rooms (external view)	FR	Low
Persons within passenger waiting rooms	AO	Low
Persons in the vicinity of platform seating areas	AO	Medium
Persons waiting or moving in underground platform areas	PD	Medium
Persons waiting or moving in above ground platform areas	SA	Medium
Persons on turn back platforms	SA	Low
Persons in the vicinity of platform ends (underground)	AO	High
Persons in the vicinity of platform ends (above ground)	SA	High
Persons on train crew change over platform areas	PD	Medium

The CCTV system shall, for at-grade commuter car parks of interchanges, railway stations, wharves, light rail stops designated as coverage standard 2, meet the functional requirements specified in Table 11.

**Table 11 – Commuter car parks (at-grade) functional requirements: Coverage standard 2**

<b>View of interest</b>	<b>Application</b>	<b>Recording frequency</b>
Persons using designated car park pedestrian entries and exits	FR	Medium
Vehicles entering and exiting car parks at designated entries and exits	NPR	High

The CCTV system shall, for multi-level commuter car parks of interchanges, railway stations, wharves, light rail stops designated as coverage standard 2, meet the functional requirements specified in Table 12.

**Table 12 – Commuter car parks (multi-level) functional requirements: Coverage standard 2**

<b>View of interest</b>	<b>Application</b>	<b>Recording frequency</b>
Vehicles entering and exiting car parks at designated entries and exits	NPR	High
Persons using designated car park pedestrian entries and exits	FR	Medium
Persons exiting a passenger lift or waiting at landing	AO	High
Persons within passenger lifts and the floor area	FR	Medium
Persons using designated car park pedestrian entries and exits	FR	Medium
Persons entering at the top of stairwells	FR	Medium
Persons entering external exit doors	FR	Medium
Persons entering equipment rooms	PD	Medium

The CCTV system shall, for interchange areas of railway stations, wharves, light rail stops designated as coverage standard 2, meet the functional requirements specified in Table 13.

**Table 13 – Station interchange areas functional requirements: Coverage standard 2**

<b>View of interest</b>	<b>Application</b>	<b>Recording frequency</b>
Persons at TfNSW bus stop waiting areas	PD	Medium
Persons at TfNSW taxi waiting areas	SA	Medium
Persons using bicycle parking facilities	AO	Medium

## 8.4 Transport facility – coverage standard 3

The CCTV system shall, for interchanges, railway stations, wharves, and light rail stops designated as coverage standard 3, meet the functional requirements specified in Table 14.

**Table 14 – Transport facility functional requirements: Coverage standard 3**

<b>View of interest</b>	<b>Application</b>	<b>Recording frequency</b>
Persons entering interchange, railway station, wharves, light rail stop	FR	High
Persons exiting interchange, railway station, wharves, light rail stop	FR	High
Persons entering through ticket barrier or gate array	FI	High
Persons exiting through ticket barrier or gate array	FI	High
Persons in the immediate vicinity of ticket barriers or gate arrays	AO	Medium
Persons making purchases via staff	FR	Medium
Persons using pedestal ticket readers	AO	Medium
Persons entering at the top of stairwells and escalators	FR	Medium
Persons stepping off escalators and stairs	AO	High
Persons using stairwells and escalators	PD	Low
Persons using ramps	PD	Low
Persons entering pedestrian tunnels	FR	Medium
Persons using pedestrian tunnels	AO	Medium
Persons using pedestrian bridges	AO	Low
Persons exiting a passenger lift or waiting at landing	AO	Medium
Persons within passenger lifts and the floor area	FR	Medium
Persons exiting or loitering at toilet entrance, exit door	FR	Medium
Persons at passenger interface or ticket windows	FR	Medium
Persons at passenger interface office doors	FR	Medium
Persons using ticket vending or smartcard ticketing (such as Opal) machines	FR	Medium
Persons in concourse areas	AO	Medium
Persons operating fire exits	FR	High
Persons using and in the vicinity of emergency help points	FR	Medium

<b>View of interest</b>	<b>Application</b>	<b>Recording frequency</b>
Persons in the vicinity of public telephones	FR	Medium
Persons entering and exiting control rooms	FR	Medium
Persons entering rail corridor tunnel portals	FI	High
Persons in high activity circulation areas	AO	Medium

The CCTV system shall, for platform areas of railway stations, wharves, light rail stops designated as coverage standard 3, meet the functional requirements specified in Table 15.

**Table 15 – Platform area functional requirements: Coverage standard 3**

<b>View of interest</b>	<b>Application</b>	<b>Recording frequency</b>
Persons entering passenger waiting rooms (external view)	FR	Low
Persons within passenger waiting rooms	AO	Low
Persons in the vicinity of platform ends (underground)	AO	High
Persons in the vicinity of platform ends (above ground)	SA	High
Persons in the vicinity of platform seating areas	AO	Medium
Persons waiting or moving in underground platform areas	AO	Medium
Persons waiting or moving in above ground platform areas	PD	Medium
Persons on turn back platforms	SA	Medium
Persons on train crew change over platform areas	AO	High

The CCTV system shall, for at-grade commuter car parks of interchanges, railway stations, wharves, light rail stops designated as coverage standard 3, meet the functional requirements specified in Table 16.

**Table 16 – Commuter car parks (at-grade) functional requirements: Coverage standard 3**

<b>View of interest</b>	<b>Application</b>	<b>Recording frequency</b>
Vehicles entering car parks at designated entries	NPR	High
Vehicles exiting car parks at designated exits	NPR	High
Persons using designated car park pedestrian entries and exits	FR	Medium

The CCTV system shall, for multi-level commuter car parks of interchanges, railway stations, wharves, light rail stops designated as coverage standard 3, meet the functional requirements specified in Table 17.

**Table 17 – Commuter car parks (multi-level) functional requirements: Coverage standard 3**

<b>View of interest</b>	<b>Application</b>	<b>Recording frequency</b>
Vehicles entering car parks at designated entries	NPR	High
Vehicles exiting car parks at designated exits	NPR	High
Persons using designated car park pedestrian entries and exits	FR	Medium
Persons entering at the top of stairwells	FR	Medium
Persons entering external exit doors	FR	Medium
Persons exiting a passenger lift or waiting at landing	AO	High
Persons within passenger lifts and the floor area	FR	Medium
Persons entering equipment rooms	AO	Medium

The CCTV system shall, for interchange areas of railway stations, wharves, light rail stops designated as coverage standard 3, meet the functional requirements specified in Table 18.

**Table 18 – Interchange areas functional requirements: Coverage standard 3**

<b>View of interest</b>	<b>Application</b>	<b>Recording frequency</b>
Persons at TfNSW bus stop waiting areas	PD	Medium
Persons at TfNSW taxi waiting areas	SA	Medium
Persons at TfNSW 'Kiss and Ride' waiting areas	SA	Medium
Persons using bicycle parking facilities	AO	Medium

## **8.5 Railway stabling yards and maintenance facilities**

The CCTV system shall, for railway and light rail stabling yards, maintenance facilities, and turnback roads meet the functional requirements specified in Table 19.

**Table 19 – Railway and light rail stabling yards and maintenance facilities functional requirements**

<b>View of interest</b>	<b>Application</b>	<b>Recording frequency</b>
Persons in the near vicinity of the perimeter fence and the perimeter fence itself.	PD	High
Persons entering and exiting through designated entry and exit points	FI	High
Persons in amenities areas and workshops	AO	Medium
Persons in civil construction and stockpiling areas	AO	Medium
Persons using pathways	PD	Medium
Vehicles entering through car and track maintenance vehicle gates	NPR	High
Persons entering through car and track maintenance vehicle gates	FI	Medium
Persons moving between stabled sets	PD	Medium
Persons moving in car parks	AO	Medium
Vehicles entering staff car parks at designated entries	NPR	High
Vehicles exiting staff car parks at designated exits	NPR	High
Persons using designated staff car park pedestrian entries and exits	FR	Medium

## 8.6 Railway and light rail signalling, substation, and control room facilities

The CCTV system shall, for railway and light rail signalling, substation, and control room facilities, meet the functional requirements specified in Table 20.

**Table 20 – Railway and light rail signalling, substation, and control room facilities functional requirements**

<b>View of interest</b>	<b>Application</b>	<b>Recording frequency</b>
Persons in the near vicinity of the perimeter fence	PD	High
Persons in the near vicinity of the perimeter fence and the perimeter fence itself.	PD	High
Persons moving within a transformer compound	AO	High
Persons moving within the sterile zone	AO	High
Persons in civil construction and stockpiling areas	AO	Medium
Persons using pathways	PD	Medium

<b>View of interest</b>	<b>Application</b>	<b>Recording frequency</b>
Vehicles entering through designated entry points	NPR	High
Persons entering through designated entry points	FI	Medium
Persons using pathways	PD	Medium
Persons moving in car parks	AO	Medium
Vehicles entering staff car parks at designated entries	NPR	High
Vehicles exiting staff car parks at designated exits	NPR	High
Persons using designated staff car park pedestrian entries and exits	FR	Medium

## 8.7 Level crossings

Where there is a requirement to install CCTV cameras at a level crossing, the minimum recording rate, irrespective of the view of interest, shall be not less than 25 IPS.

## Appendix A Suggested reading

The following documents have not been directly referred to in this document. However, these documents may assist with providing contextual information on public transport CCTV requirements and have been included here as suggested reading:

- Association of Train Operating Companies (ATOC) November 2010, *National Rail & Underground Closed Circuit Television (CCTV) Guidance Document*
- Australia New Zealand Policy Advisory Agency 2014, *Australia and New Zealand Police Recommendations for CCTV Systems*
- British Security Industry Association (BSIA) 2021, *Planning, design, installation and operation of video surveillance systems (VSS) code of practice and associated guidance*
- NSW Department of Justice 2014, *NSW Government policy statement and guidelines for the establishment and implementation of closed circuit television (CCTV) in public places*
- Open Network Video Interface Forum (ONVIF)
- *Point to Point Transport (Taxis and Hire Vehicles) Regulation 2017* (NSW)
- UK Home Office 2009, *CCTV Operational Requirements Manual*
- US Department of Homeland Security May 2018, *Digital Video Quality Handbook*
- US Department of Homeland Security May 2018, *Digital Video Quality Handbook Appendix*.