TS 01515.3:1.0

T MU AM 01006 ST

Standard

Asset Information

Part 3: Asset Location Classification

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Document information

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1.0	30/06/2023	First issue as TS 01515.3. Version renumbered to 1.0 in line with new designation.

Preface

This is a first issue as TS 01515.3 and supersedes T MU AM 01006 ST *Asset Location Classification*.

This standard sets requirements for stakeholders involved in the development of asset location classifications for TfNSW transport assets and the principles to be followed that allow for a transparent and consistent application of location classifications.

The changes from the previous version include the following:

- inclusion of all modes of transport including active transport, non-infrastructure assets, roads location classification and location hierarchy
- simplification of requirement application.

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1 Scope

This standard specifies the requirements for the identification and application of asset location classifications that are used for location referencing of TfNSW transport assets and including both fixed infrastructure and mobile plant. This applies to the asset information systems, asset registers and associated asset information (data and documents) captured and managed in accordance with requirements of TS 01515.1. This standard applies to physical assets only.

This document aims to achieve the following:

- ensure consistency and quality in the application of asset location classification for every instance of an asset
- enable consistent searching, analysing and reporting on asset information (data and documents) across the modes and related information systems that are used for the whole-of-life management of TfNSW transport assets
- facilitate the integration and transfer of data from various asset information systems managed by TfNSW, TfNSW agencies and service providers.

This standard defines the asset location classification to be applied including models, criteria, conventions and application of the location classification codes.

Figure 1 shows the TfNSW document hierarchy and the level at which this standard sits.

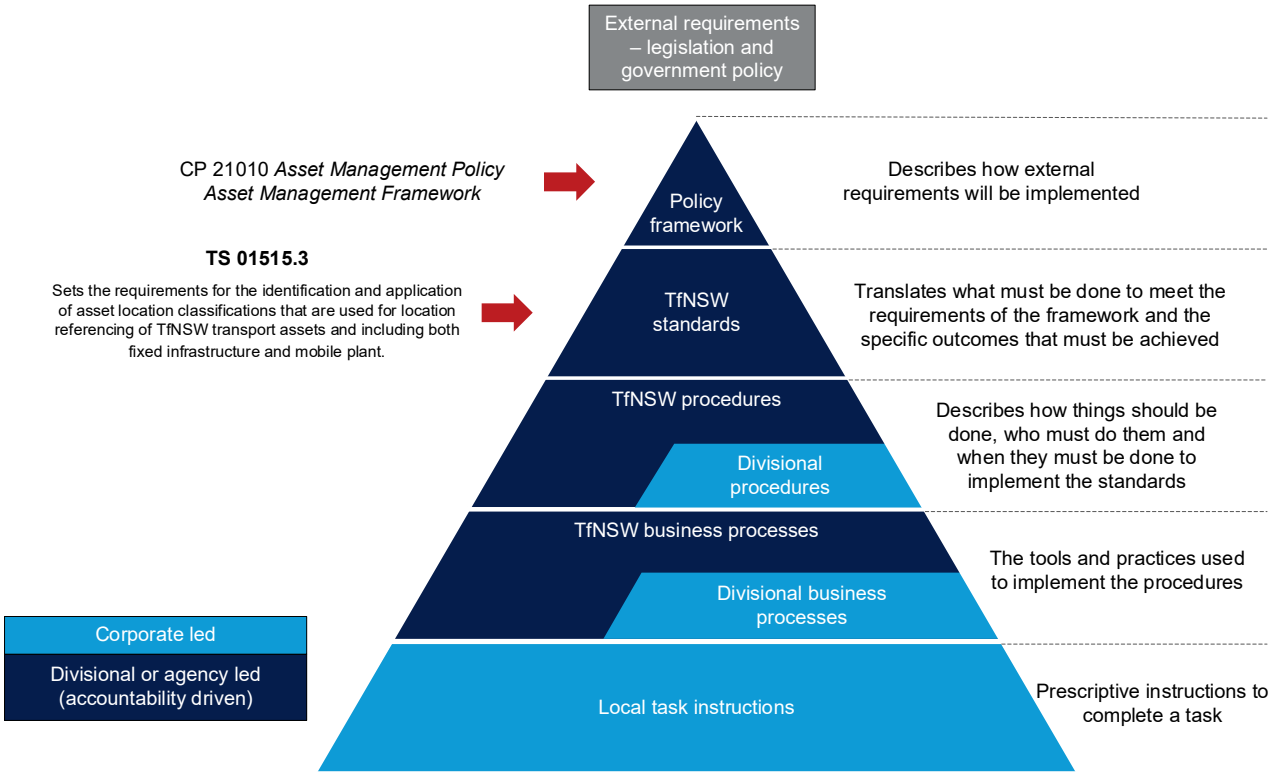


Figure 1 – TfNSW document hierarchy

2 Application

This standard applies to all transport modes.

This standard is intended to be used by the following:

- TfNSW agencies
- service providers engaged by TfNSW to provide engineering services that cover any part of the asset life cycle of TfNSW transport assets
- service providers that manage asset information of TfNSW transport assets
- asset custodians and asset stewards
- third parties whose work affects TfNSW transport assets.

This standard is related to defining, designing, implementing, commissioning and integrating any new or altered assets or systems into the operating network and maintaining such assets or systems within an asset information system.

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.

Transport for NSW standards

TS 01495 (T MU AM 01006 F1) *Asset Location Classification Code Form*

TS 01499 (T MU AM 01007 TI) *Asset Reference Codes Register*

TS 01501 (T MU AM 02002 TI) *Asset Classification System*

TS 01515.1 *Asset Information – Part 1: Management of Asset Information*

TS 03499 (ESC 210) *Track Geometry and Stability*

Other referenced documents

Roads Act 1993 (NSW)

RTA, 2008, *NSW Road Management Arrangements*

4 Terms, definitions and abbreviations

The following terms, definitions and abbreviations apply in this document.

AMB Asset Management Branch

asset custodian the TfNSW Division accountable for the end to end lifecycle management and performance of assets (including asset condition, risk and reporting) on behalf of the asset owner to achieve agreed customer and community outcomes

asset information the combined set of data (graphical and non-graphical) and documents (drawings, manuals, plans and certificates) required to support the management of assets over the life cycle

asset information repository a recognised electronic location for the storage and management of asset information

asset information system a set of interrelated repositories of structured asset information and related processes required to manage the asset portfolio over the life cycle

asset class used to define and group assets having a similar nature in the operations of an entity and comprised of a number of related asset functions

asset container enables a structured approach to navigation within an asset register hierarchy

asset portfolio assets that are within the scope of the asset management system (Source: AS ISO 55000)

asset register record of asset inventory considered worthy of separate identification including associated historical, condition, construction, technical and financial information about each asset

asset steward the entity given the responsibility by an asset custodian to oversee part of the life cycle process for an asset

base code unique identifier representing the full length of one track contained within a rail corridor (including rail yards). All tracks including crossovers and sidings have been uniquely identified with a track base code

corridor a zonal area (within a boundary and defined by a start and end node) that contains heavy rail, light rail, road or maritime infrastructure assets to support the operation of transport services

facility a zonal area (within a precinct boundary) that contains buildings, systems, plant and associated infrastructure assets to support the operation and maintenance of transport services

fixed infrastructure refers to corridor (network) based assets, feeder based assets, facility based assets or interchange based assets.

fleet refers to passenger and non-passenger asset forms of transport and includes mobile plant assets

HV high voltage

information model set of structured and unstructured information containers

interchange the area where customers access and egress transport services on the public transport network and may transfer between modes or services. Interchanges have the following attributes:

- includes transport infrastructure assets attributed to the main station, wharf or stop, and other transport modes
- can have multiple areas which may not be contiguous
- there are no interchanges within interchanges, although an interchange may contain stations, wharves, stops or sub-areas where specific customer transfers occur but the whole facility is regarded as one interchange.

rotable a component or inventory item which can be removed from a unit, repaired or improved, and returned to the unit repeatedly and economically

station an access or egress point to a train service with associated transport infrastructure assets. The station resides within an interchange

stop an access or egress point to a light rail service or bus service with associated transport infrastructure assets. The stop resides within an interchange

MRA metropolitan rail area; the rail freight network and the rail passenger network within the metropolitan rail area bounded by Newcastle (in the north), Richmond (in the northwest), Bowenfels (in the west), Macarthur (in the southwest) and Bomaderry (in the south), and all connection lines and sidings within these areas, but excluding private sidings

mobile plant assets that are a categorisation of fleet assets within asset container

OHW overhead wiring

TfNSW Transport for NSW

transport assets means assets used for or in connection with or to facilitate the movement of persons and freight by road, rail, sea, air or other mode of transport, and includes transport infrastructure (Source: *Transport Administration Act 1988*)

transport form type of vehicle or method used to facilitate the movement of people and freight. For example, train, bus, ferry, light rail vehicle, car, motorcycle, bicycle or walking

transport infrastructure infrastructure (including associated vehicles, vessels and rolling stock) used for or in connection with or to facilitate the movement of persons and freight by road, rail, sea, air or other mode of transport (including walking and cycling). It includes:

- railways and railway infrastructure
- roads and road infrastructure
- maritime infrastructure and ports
- transport safety infrastructure
- systems, works, structures, buildings, plant, machinery and equipment that are associated with or incidental to transport infrastructure.

transport mode the means by which people and freight move from place to place. Falls into one of three basic types: land (bus, car, truck, motorbike, train), active (walking and cycling), sea (ship and ferry) and air

transport network the transport system (transport services and transport infrastructure) owned and operated by TfNSW, its operating agencies or private entities upon which TfNSW has power to exercise its functions as conferred by the Transport Administration Act or any other Act

wharf an access or egress point to a ferry service with associated transport infrastructure assets. It resides within an interchange

XSP cross sectional position

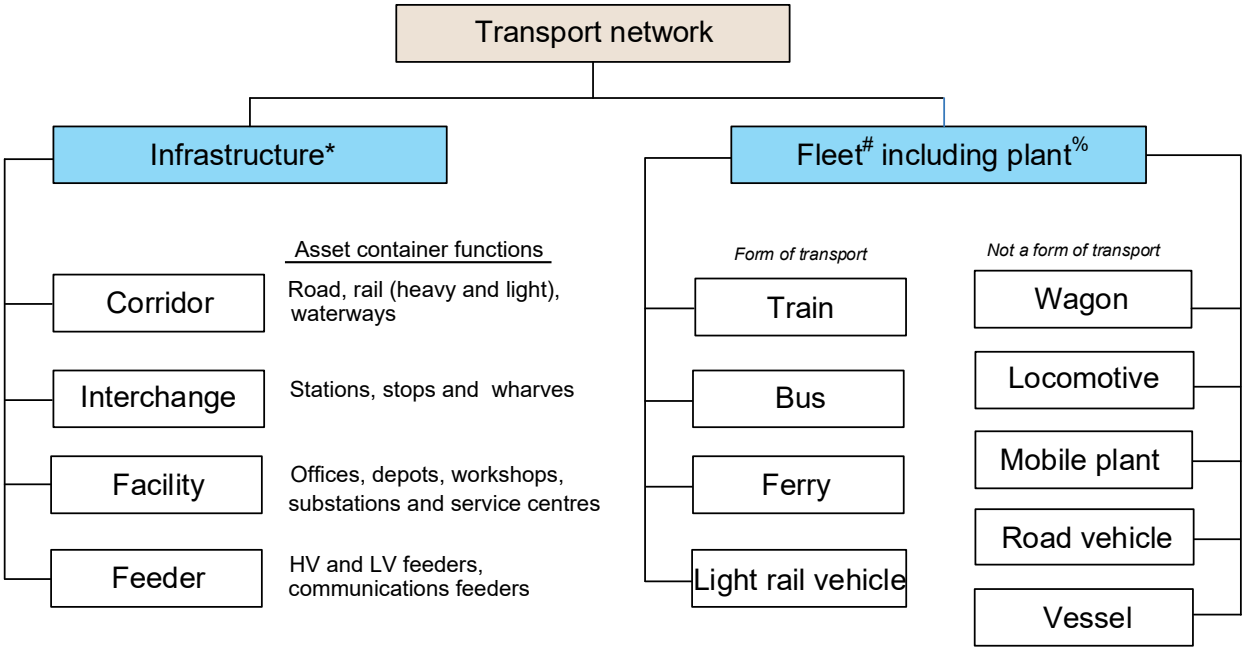
yard a linear zonal area (within a boundary and defined limits) that contains heavy rail, light rail, road or maritime infrastructure assets and facilities to support the stabling, servicing and presentation of the transport fleet. This is an area that contains one or more rail sidings, roads or a shipyard identified for a business purpose.

5 Asset location classification

The transport network comprises infrastructure that covers both fixed infrastructure and fleet assets including rotables. Fixed infrastructure assets shall be categorised as linear or non-linear. Infrastructure assets are contained within asset containers. These asset containers, defined as separate asset location classes, enable a structured approach to navigation and location of assets within an asset register hierarchy. TS 01501 provides details on asset classes, asset containers and the development of asset register hierarchies.

All infrastructure assets (fixed and fleet), including rotables that exist within an asset container shall have an asset location classification applied regardless of what level they exist at within the asset register hierarchy.

The asset containers as shown in Figure 2 are modelled together to form a concept model to define all road, rail, and maritime networks.



** These are Infrastructure based containers of transport assets (for a **mode** of transport)*
*# These are fleet based containers of transport assets (self containing for a **form** of transport)*
*% These are fleet based containers of transport assets (self containing but **not a form** of transport)*

Figure 2 – Asset containers (infrastructure and fleet)

Each asset container shall contain systems and assets from other asset classes. Every instance of these asset containers shall be an asset in its own right in accordance with the requirements of TS 01501. Asset containers shall define and support a functional asset hierarchy of TfNSW transport assets.

Asset location classification (how and where the assets are located) is dependent on whether the container is fixed infrastructure related or fleet related. Asset location classifications defined in this standard cover the following:

- corridors
  - for referencing assets within a geographic rail corridor (heavy rail and light rail), road corridor or waterway
  - criteria for corridors including associated coding – see Section 6.1
- locations
  - general – for referencing assets within a smaller geographic area within a corridor
  - site specific – for referencing assets to a specific site (major facility) within a general location
  - criteria for locations and sites including associated coding – see Section 6.2

- primary location classification for fleet assets identifying the home depot of the fleet

- positions
  - positions are dependent on the container – see Table 1
  - track specific assets shall use base code to define position of track-based assets
  - OHW specific assets shall use traction section to define position of OHW assets
  - road specific assets shall use the cross sectional position codes to define position of road based assets.

Other non-spatial asset location information is included as additional location reference attributes in TS 01501.

5.1 Asset hierarchy

Both fixed infrastructure and fleet containers shall define and support a functional asset hierarchy of transport assets. Asset location classification (how and where the assets are located) is dependent on whether the container is fixed infrastructure related or fleet related as shown in Figure 3. Assets within each container (what assets exist) are defined in accordance with TS 01501.

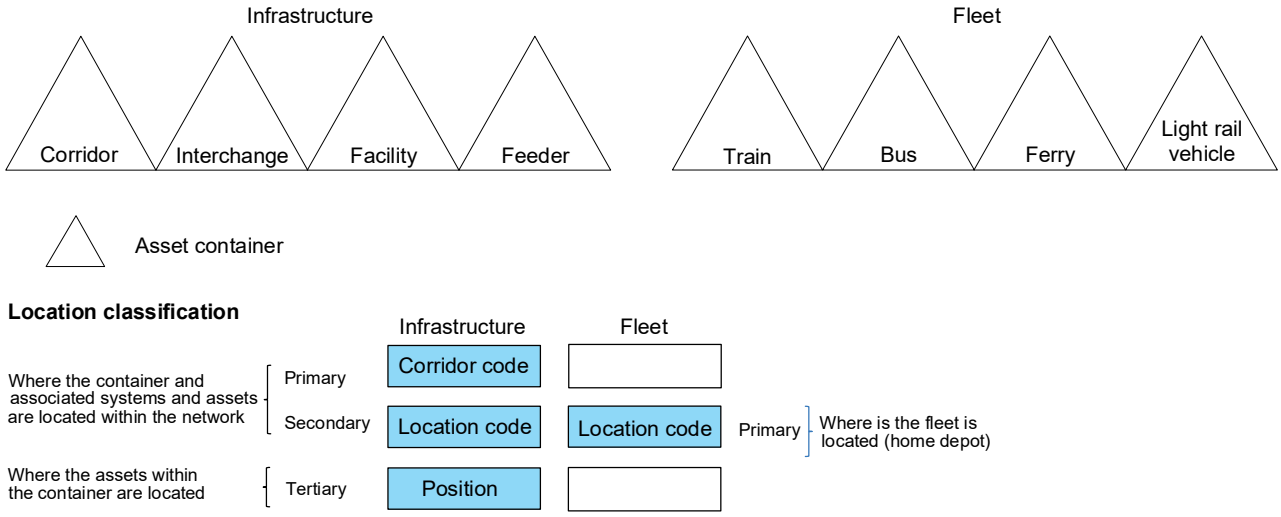


Figure 3 – Asset container hierarchy model

Note: For corridors the secondary location classification is related to how the corridor is segmented

Every instance of an infrastructure container shall be associated with an asset container function and aligned with a primary and secondary location classification to determine the location of the container within the network. The tertiary location classification will be defined as a position or space location classification which determines the location of the systems and assets within the container.

Figure 4 shows a typical functional asset hierarchy. The asset container defines all the systems, assets and sub-assets contained within an instance of the container and in accordance with the requirements of TS 01515.1.

The following requirements apply to containers:

- The container defines the systems and assets that exist. Complex assets shall be broken down into sub-assets where required.
- The container including all systems, assets and sub-assets within the container shall be associated with a container function.
- The container including all systems, assets and sub-assets within the container shall be defined in accordance with TS 01501.
- The container asset hierarchy shall be based on a functional breakdown.

Assets from different parts of the functional hierarchy may exist in the same physical position (space).

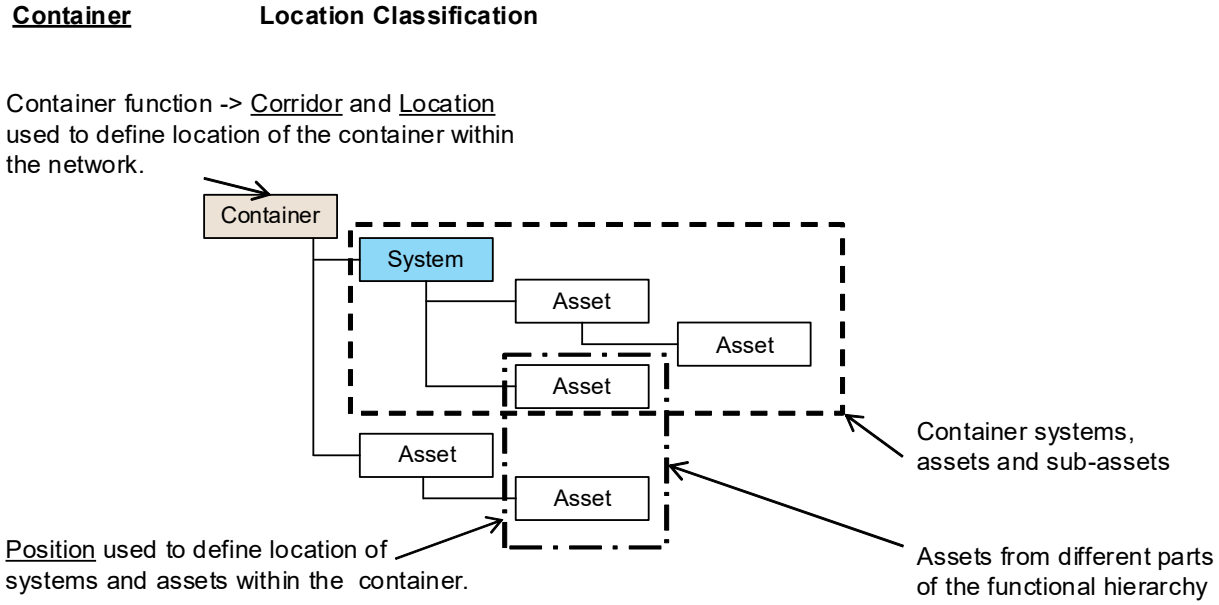


Figure 4 – Asset container hierarchy model

Note: Asset location classification of containers including all systems, assets and sub-assets within the container shall be defined as attributes. Multiple locations may exist along a road or rail corridor. This location is used to segment the corridor in defined links and nodes.

Asset location classification enables the physical location referencing of all systems and assets within a functional asset hierarchy for every asset container across the transport network.

The asset location classification shall be applied to assets to identify both the general geographic and specific location (where applicable). Assets shall be defined, structured and managed in an asset register using an asset hierarchy as shown in Figure 3.

Asset location classification shall be applied within the asset register and associated asset information system. For example, document management systems, operational and timetable systems and incident management systems where corridors, general locations, site locations and other location-based identification such as track base codes and road link numbers are required to be used. This ensures consistency in definition and application and supports searching and filtering of assets and their associated asset information (data and documents).

Asset containers shall be identified and assigned an appropriate location classification. This is done to reflect the required asset containers needed to allow for an orderly organisation of the required asset and system networks.

Classification refers to the application of an appropriate type of attributes to an item in the information model.

A reference is an identifier and is essential to uniquely identify each item within the information model.

All asset locations are assigned a unique location reference. For any existing asset locations existing references shall be preserved.

Asset locations are organised hierarchically to provide contextual relationships between asset locations.

All locations within the transport network shall be associated with a parent network code to differentiate the mode as a minimum. Once asset locations are defined, they can be used to group assets.

6 General criteria for asset location classification codes

TfNSW are the owners of the asset location classification. The AMB is the custodian on behalf of TfNSW and controls and manages the published register of approved codes for use across the transport network.

The AMB is responsible for the data management and stewardship of these codes.

Use TS 01495 for the creation or modification of codes. Refer to TS 01499 for the existing register of all codes.

6.1 Primary classification – corridor

Corridors are used to define a linear zonal area where TfNSW assets are located and contains everything that exists within its boundary.

Multiple transport corridors are recognised within NSW by TfNSW. Assets within a corridor (for example, roads, tracks, bridges, culverts, tunnels, OHW and signalling) including those contained within interchanges, facilities and feeders shall be assigned a corridor code.

Zonal areas that contain infrastructure assets identified for a business purpose are geographic locations associated with the corridor it services and as such not defined as a separate corridor. In this case the zonal area location code is used instead of a corridor as the container of assets within the asset register hierarchy.

Assets, including facilities that are off the corridor shall not be assigned a corridor code unless they are directly servicing a corridor.

Assets, including interchanges and facilities, located in a junction or servicing multiple corridors shall be assigned the primary corridor.

The corridor shall be continuous (that is with no discontinuities or breaks along the length of the corridor) and shall be referenced by a nominal start point for length.

All corridor assets shall be associated with one corridor.

6.1.1 Rail corridor codes

Any asset information system or repository that is used to identify and manage an asset by railway corridor shall use the corridor codes in TS 01499.

Each rail corridor shall be defined by a three character code. The first character of the corridor code shall be an alpha code representing the primary geographic region or direction. The remaining two characters shall be numeric.

Branching corridors off the main corridor shall commence at a kilometrage based on the junction kilometrage of the main corridor. Every branch at a junction results in a new unique corridor.

The junction turnout on the corridor shall belong to the main corridor and not the branching corridor.

The length of a rail corridor shall be defined by the minimum start and maximum end kilometres of all the track base codes contained within the rail corridor.

A rail corridor shall begin at a node location, usually a junction (main to main or main to yard), or a defined 0 km point and shall end at another node location, usually a junction (main to main or main to yard) or termination.

All rail corridors branching off main corridors shall be prefixed with the same letter as the main corridor except in the MRA where M shall be the prefix except for coal lines where C shall be the prefix.

6.1.2 Road corridor codes

Any asset information system or repository that is used to identify and manage an asset by road corridor shall use the corridor codes listed as the key numbering system in TS 01499.

Each road corridor shall be defined by the corridor code in TS 01499. This is a numeric code with leading zeroes of up to seven digits representing one bidirectional road corridor.

All corridors that are declared as highways, main roads, secondary roads or tourist roads are classified under sections 46, 47, 50 or 51 respectively of the *Roads Act 1993*.

NSW Road Management Arrangements categorises the following three categories of road for the purpose of road management between TfNSW and councils in NSW:

- State Roads
- Regional Roads
- Local Roads.

The length of a road corridor shall be defined by the minimum start and maximum end kilometres of all the road segments contained within the road corridor.

All infrastructure assets directly servicing or associated with a section of a gazetted road, shall have the appropriate gazetted road number assigned.

Refer to TS 01501 for information on asset classification elements and class specific attributes.

6.1.3 Waterway codes

Any asset information system or repository that is used to identify and manage an asset by waterway location shall use the location or site codes in TS 01499.

A waterway is a geographic location and as such not defined as a separate corridor. In this case the waterway location is used instead of a corridor as the container of assets within the asset register hierarchy.

Each waterway location shall be defined by a general location code (see Section 6.2.1). This is a three character code to represent general geographic areas. The first character of the waterway code shall be an alpha code representing the primary geographic region or direction. The remaining two characters shall be numeric.

Location mapping shall provide the geographical location of the waterway location (harbour, port, river, lake, creek and so on).

The general location of the waterway shall be used as the corridor.

6.2 Secondary classification – location

Locations shall be used to define geographic areas where TfNSW assets are located either on or off the rail corridor, road corridor or waterway.

Every asset information system or repository that is used to identify and manage an asset by location shall use the general location codes and site location codes in TS 01501.

A location shall be used to define the general geographic area where assets physically exist for all assets on or off a corridor.

Locations shall be used to provide a general geographic or a specific site location of every linear and non-linear fixed TfNSW asset or as the specific home depot site location of every mobile (fleet and plant) TfNSW asset.

An asset shall only have one location code. The site location code shall be used instead of the general location code where applicable.

Locations shall exist to define zonal areas.

Locations shall exist to define junctions as a means for defining a change in corridor and for defining the start or end location.

Locations shall be used to identify both operational and non-operational assets including heritage and disused assets.

Only locations for major facilities and associated assets contained within the Sydney central business district (CBD) shall be classified as Sydney.

Location codes shall be unique to a location within NSW.

Location codes shall be created for every interchange name except those that use the three character location code of the locality (see Section 7.1.2).

Linear assets, such as corridors, fencing, tracks, roads, OHW, tunnels, combined service routes and earthworks that span more than one location shall not have a location code assigned but will be referenced by the corridor they service and by a start and end reference along the corridor (for example, kilometre start and kilometre end).

6.2.1 General location codes

General locations are based on the unique names of the following geographic areas:

- localities (for example, suburbs)
- interchanges (for example existing within a rail corridor, road corridor or wharf and may or may not be named after a suburb)
- waterways (for example, rivers, ports)
- other significant locations (for example, rail yards, junctions, collieries and quarries)

Each location shall be defined by a three character code to represent general geographic areas.

A general location code shall be defined for the whole interchange precinct.

Assets shall use the general location code of the locality if not associated with an interchange.

An interchange location servicing multiple transport modes with the same name shall be assigned one location and share the same general location code.

6.2.2 Site location codes

The three character general location code shall be used as a prefix for defining site location codes (five characters or more) for major facilities contained within the general geographic location.

The site location code shall be used instead of the general location code for major facilities including all the assets contained within that facility (where applicable).

Site location codes shall be used to uniquely define a specific site location for each major facility.

A unique site location code shall be defined for the following major facility functions:

- fleet depots (train, light rail vehicle, bus, ferry – maintenance, servicing, presentation depots and shipyards)
- electrical substations (traction substations and non-traction system substations) and sectioning huts
- signalling complexes
- warehouse or fabrication complexes
- office complexes (for example, offices, training centres and operations centres).

Separate site location codes (based on the general geographic location) shall be defined for all major facilities. All assets within the major facility shall inherit the same site location code as the facility.

Major facility site location codes shall be based on the general location code of the interchange name, locality or other significant location.

Specific node locations to support detailed operational requirements shall use the general three character location code as a prefix where possible. Node locations will not be controlled or published in relation with this standard.

Electrical bulk supply feeders shall use the site location code of the substation it is supplying as its location. Other electrical, signalling and communications cables and feeders shall use the location of the primary source end or the lowest pole number end (for aerial feeders) to determine the location of the cable or feeder.

A site location code shall be defined using the following convention XXXYYZZ (up to seven characters), where:

- XXX is the three character general location code.
- YY is the unique identification of the site within a general location. Multiple site locations within a general location will have their own unique site location code. This is two character numeric and sequential number, for example, PTA01 is a different site to PTA02.
- ZZ is the floor level of the site, if required. This is a two character alphanumeric code.

A site code cannot exist without a general location code (for example, prefix PTA shall first be registered as the general location code for Parramatta, then a site location code may be created from the registered general location code for example, PTA0200).

6.2.3 Road link number

The road link number is a unique identifier for a length of road between intersecting TfNSW managed or funded roads, or any changes in route carriageway types between these intersections. This is a four digit numeric code with leading zeroes.

A new road link number shall be given at intersections or the start of a new carriageway.

Each road link number shall start at the node with the lowest kilometre value in which direction of traffic flows.

Further segmentation of the road link number shall be continuous in one direction and may contain two or more lanes. A new road link code shall be given at intersections or the start of a new carriageway.

6.3 Tertiary classification – position

6.3.1 Base codes

A base code uniquely represents one track within only one rail corridor or rail yard for both heavy rail and light rail tracks. All tracks including crossovers and sidings have been uniquely identified with a base code. Any asset information system or repository that is used to identify and manage an asset by base code shall use the base codes in TS 01499.

All infrastructure assets directly servicing or associated with a section of track (for example, OHW, signals, points, track circuits, lubricators, tunnels, bridges, level crossings and so on) shall have the appropriate base code assigned.

Base codes shall only be created with start or end track nodes that have one of the following physical track features:

- turnouts (points)
- dead ends such as buffer stops or stop blocks

- 0.000 km at Central station (for Sydney heavy rail) as defined in TS 03499
- 0.000 km at Pitt Street (for Inner West Light Rail)
- 0.000 km at Circular Quay stop (for CBD and South East Light Rail)
- 0.000 km at Parramatta stop (for Parramatta Light Rail)
- 0.000 km at Newcastle Interchange stop (for Newcastle Light Rail)
- major kilometre discontinuities.

The kilometre on a base code shall be continuous in one direction. A new base code shall be given at major location discontinuities; for example, Cabramatta Junction, Meeks Road Junction. These junctions shall also have a unique general location code assigned.

The track node feature ‘turnout’ shall be defined as belonging to the through main corridor.

Each base code shall start at the track node with the lowest kilometre value.

Base code names shall be derived from the common operational track name on the corridor; for example, Illawarra – down main, main suburban – up local. Refer to TS 01499 for details in relation to track names and abbreviations.

Each base code (shown in brackets) shall be defined as one of the following track types:

- mainline (M) – includes, mains, suburbans, locals, reliefs, platform roads, turnback roads, crossing loops
- crossover (X) – adjoining crossover track between turnouts and slips
- siding (S) – all other tracks including balloon loops.

Each base code represents the full length of one track contained within a rail corridor.

6.3.2 Road carriageway code

The road carriageway group encompasses the bidirectional width of roadway for the movement of vehicles. The road carriageway group is not part of the location classification but is used to support location data loading activities.

The road carriageway code is the identifier for a specific carriageway function and purpose. There are single carriageways and dual carriageways represented as single or dual lines in the spatial representation.

The road carriageway code commonly has two alphanumeric characters. Character length may fluctuate up to six alphanumeric characters during transition phases.

Refer to TS 01499 for road carriageway codes.

6.3.2.1 Cross sectional position

XSP is a fourth location classification level. XSP is the transverse position or orientation of the asset in relation to the road carriageway.

The XSP location reference is not applicable for all road assets and may be used to identify between assets of the same type that occupy the same linear carriageway location. For example:

- road shoulder data use carriageway side XSP of L left, or R right
- road lane data use carriage lane position XSPs PT1 prescribed through 1, PT2 prescribed through 2 and so on
- longitudinal pavement line marking use carriage line position XSPs P1 PMK prescribed 1, P2 PMK prescribed 2 and so on
- XSPs F, C, P would apply when there are no defined lanes, or lane location is not applicable.

Refer to TS 01499 for XSP value lists.

Refer to TS 01501 for information on asset classification elements and class specific attributes.

6.3.3 Location description

Location description is used to provide a narrative explanation of the asset's location. Refer to Section 7 for examples of its application dependent upon the asset location container class.

7 Fixed infrastructure assets

Fixed infrastructure assets shall be created in a structured hierarchy and contained within one of the four asset containers as follows:

- corridors
- interchanges
- facilities
- feeders.

Asset location classification codes have been created to standardise and define where the container is located and where the associated systems and assets within each container are located. Asset location classification codes shall be used as the primary means of defining the physical asset location reference separate to the geospatial asset location reference as shown in Table 1. Asset container classes are shown with relation to associated location references.

Table 1 – Location classification and references for fixed infrastructure network containers

Location classification	Corridors	Interchanges	Facilities	Feeders
Primary – corridor Corridor code	For each road corridor For each rail corridor	For bus stops on a road corridor For train stations or light rail stops on a rail corridor For ferry wharves on a waterway	For facilities servicing a road corridor For facilities servicing a rail corridor For facilities servicing a waterway.	For feeders with easements on a road corridor For feeders with easements on a rail corridor
Secondary – location Location code	General locations along a corridor or waterway	General location of interchange	General location (minor)	General location (minor)
Secondary – location Location code	General locations along a corridor or waterway	General location of interchange	Site location (major) – includes floor or level identifier	Site location (major) – includes floor or level identifier
Secondary – location Road link number	For road corridors	Not applicable	Not applicable	Not applicable
Tertiary – position XSP	For road corridors	Not applicable	Not applicable	Not applicable
Tertiary – position Base code	For rail corridors	Not applicable	Not applicable	Not applicable
Tertiary – position Location description	For waterway corridors	Unique spatial location for example, lift room L1, comms room C2	Unique room reference. For example, power room P2, motor room M1, signal room S1	Primary access address

Geographic asset location classifications defined in this standard for infrastructure assets cover corridors and general locations.

Specific asset location classifications defined in this standard for infrastructure assets cover site locations.

Site locations shall be applied to major facilities that exist within a general location to provide a means to identify the specific site location of the following:

- a facility regardless of how it is named to ensure the site location code uses the general location code (based on the locality or interchange name) as the way to uniquely identify each facility within a general location, including all the assets contained within (including bulk electrical HV supply feeders to the facility or electrical HV distribution feeders from the facility)
- fixed plant and equipment (within a facility or interchange) for maintenance and financial capitalisation requirements.

Infrastructure assets shall be associated with a corridor, general location, or site location where applicable in accordance with the requirements defined in Section 7.

Every instance of an infrastructure container shall be associated with an asset container function and aligned with a primary and secondary location classification to determine the location of the container within the network. The position or space location classification determines the location of the systems and assets within the container.

Location breakdown covers both location classification and location referencing. Location classification drills down from a network perspective based on the primary container as follows:

- corridor (for example, rail, road corridor): corridor drills down to location (general) which drills down to position (space)
- interchange (for example, station, stop): corridor drills down to location (general) which drills down to position (space)
- facility (for example, traction substation, depot): corridor drills down to location (site) which drills down to position (space)
- feeder (for example, HV aerial feeder): corridor drills down to location (site) which drills down to position (space).

7.1 Corridor asset containers

Corridors contain linear and non-linear infrastructure assets, systems and rotables. The different modal corridor types are as follows:

- road – state, regional, local
- rail – main, coal, and yards
- maritime – waterways.

Every instance of a rail, road and waterway corridor shall be used as a container of assets that exist within and along the corridor and applied within the corridor asset register hierarchy.

Every corridor containing TfNSW assets shall be assigned a unique general location code regardless of how it is named. Asset location classification shall be applied to the corridor and all the assets it contains as shown in Figure 5.

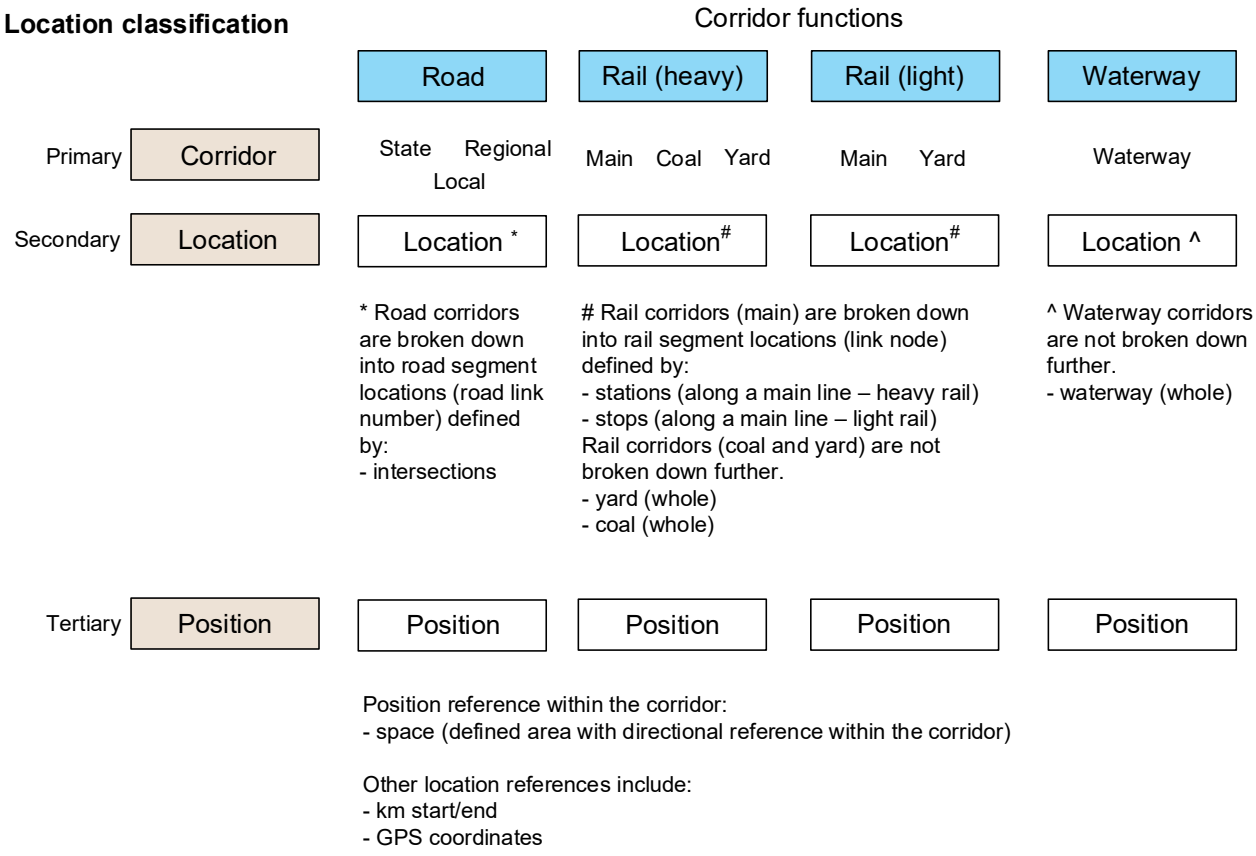


Figure 5 – Location classification for corridor asset containers

7.1.1 Corridor codes for assets within and along the corridor container

The rail and road corridor container shall be assigned a corridor code but no general location or site location code with the exception of the following:

- for rail yards, collieries and quarries, including all the assets contained within, serviced by a rail corridor the general location code shall be used as the corridor container within the asset register hierarchy in lieu of the main rail corridor
- for waterways, including all the assets contained within, the general location of the waterway shall be used as the corridor container within the asset register hierarchy as no separate corridor code shall exist for each waterway.

All corridor assets that are not part of a facility or interchange asset hierarchy shall have the applicable corridor code assigned.

The corridor container and all the corridor assets contained within it shall be assigned the same corridor code and transport mode.

Where assets exist along a transport corridor for a transport mode, the appropriate corridor code shall be assigned.

7.1.2 Location codes for assets within and along the corridor container

All assets within and along a corridor, excluding those within major facilities, shall be assigned the appropriate general location code.

7.1.3 Position of assets within and along the corridor container

Where assets exist along a rail corridor, the appropriate track base code shall be assigned.

Where assets exist within and along a road corridor, the appropriate XSP shall be assigned.

Where assets exist along a waterway corridor, a location description shall be provided that will typically include information to uniquely identify the instance of the asset in regard to its position.

7.2 Interchange asset containers

Interchanges contain infrastructure assets and systems including rotables. The different interchange types that exist to service public transport across transport modes are as follows:

- stations – train
- stops – light rail and bus
- wharves – ferry.

Every instance of a major interchange, containing a train station, light rail stop, ferry wharf or a combination shall be used as a container of assets that exist within the interchange and applied within the interchange asset register hierarchy. Assets within the one interchange may be servicing different transport modes.

Asset location classification shall be applied to the interchange and all the assets it contains as shown in Figure 6 with an example shown in Figure 7.

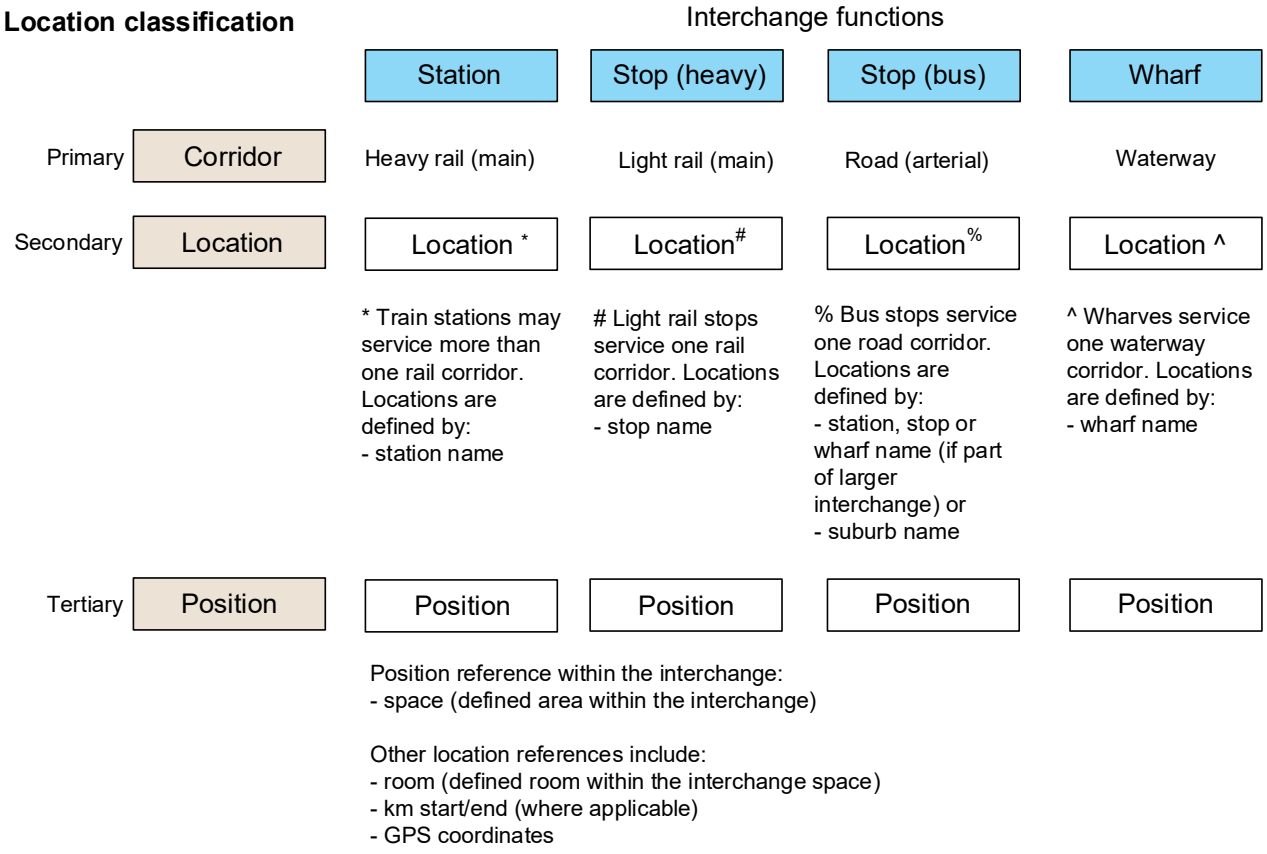


Figure 6 – Location classification for interchange asset containers

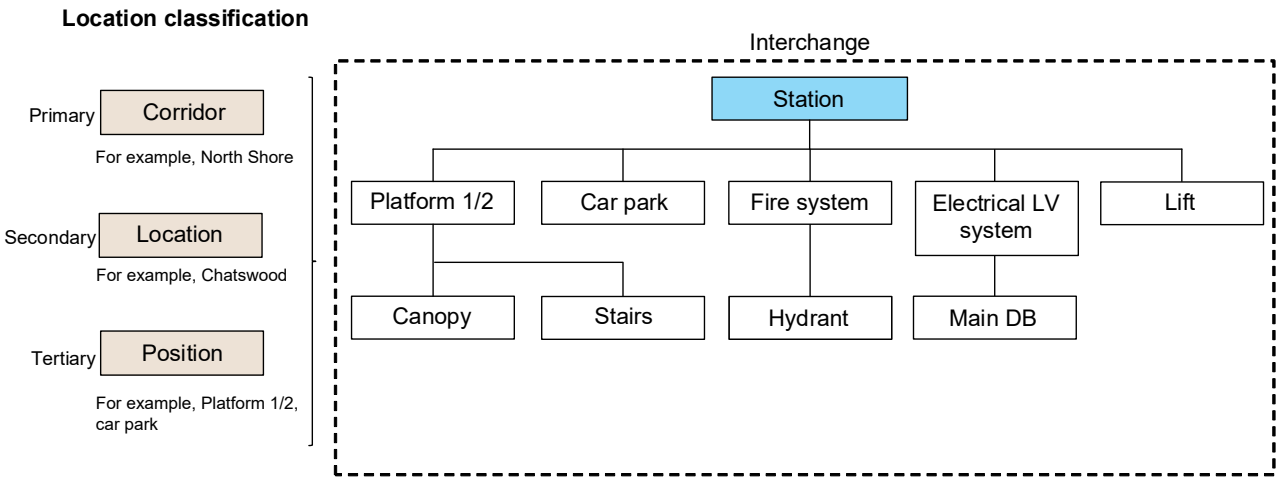


Figure 7 – Functional asset hierarchy for an interchange with examples of physical location references applied as per the location classification

7.2.1 Corridor codes for assets within the interchange container

The interchange container, including all the assets contained within, shall be assigned a corridor code including the following:

- For assets associated with a major interchange, the interchange shall be used as the specific container of assets within the asset register hierarchy. Each asset (including all the assets contained within) shall still be assigned a corridor code of the corridor it is servicing.
- For assets not associated with a major interchange (standalone), the locality shall be used as the general container of assets within the asset register hierarchy. Each asset (including all the assets contained within) shall still be assigned a corridor code of the corridor it is servicing.
- For ferry wharves, the waterway being serviced shall be the waterway code assigned to the interchange.

Where a major interchange services more than one corridor for a single mode the primary corridor shall be assigned to the interchange. The individual interchange assets contained within the asset register hierarchy shall have the applicable mode and corridor code assigned.

Where a major interchange services more than one transport mode and transport form the applicable mode shall be assigned to each of the interchange types that exist (train station, light rail or bus stop, or ferry wharf) in the asset register hierarchy that exist within the overall interchange. The individual interchange assets contained within the asset register hierarchy shall have the applicable mode and corridor code assigned. The overall interchange container in the asset register hierarchy shall be assigned the most dominant mode.

7.2.2 Location codes for assets within the interchange container

The interchange container, including all the assets contained within, shall be assigned a general location code including the following:

- For assets associated with a major interchange, the interchange shall be used as the specific container of assets within the asset register hierarchy. Each asset (including all the assets contained within) shall be assigned a general location code of the interchange.
- For assets not associated with a major interchange (standalone) the locality shall be used as the general container of assets within the asset register hierarchy. Each asset (including all the assets contained within) shall be assigned a general location code of the locality.
- Each ferry wharf (including all the assets contained within) shall be assigned a general location code of the interchange.

Where a major interchange is named by the locality it is located in, then it shall be assigned a general location code of the locality.

Where a major interchange is not named by the locality it is located in, then it shall be assigned a general location code that identifies it by its interchange name.

Where multiple major interchanges have the same name but service different modes then they shall be assigned the same general location code.

Where a minor interchange is standalone and defined by a street address it shall be assigned the general location of the surrounding locality and shall be self- containing.

Where a minor interchange is located within a major interchange it shall be assigned the general location of the interchange and shall be associated with the interchange container function it services.

Where a minor interchange is standalone and named after a feature it shall be assigned the general location of the surrounding locality and shall be self-containing.

7.2.3 Position of assets within the interchange container

Where assets exist within an interchange container, a location description shall be provided that will typically include information to uniquely identify the instance of the asset in regard to its position. For example, a location description for a ticketing machine at a station could be platform 3.

7.3 Facility asset containers

Facilities may contain fixed infrastructure assets and systems including rotables. Facilities may contain plant and equipment as well as being the home depot of fleet assets. The different facility groupings and types that exist are in TS 01499.

Table 2 – Sample of facility groupings from TS 01499 and facility asset container types

Purpose grouping	Facility container type
Electrical facilities	Substations (traction, non-traction and distribution) Sectioning huts Backup supply facilities
Maintenance facilities	Maintenance depots (fleet) – servicing and presentation Maintenance depots (infrastructure) Workshops
Manufacturing facilities	Concrete plants
Operations facilities	Operations control centres Incident response and standby facilities Drivers and guards facilities Training centres
Service facilities	Services control facilities – buildings and tunnels Services plant facilities – water and sewerage treatment plants Laboratories

Purpose grouping	Facility container type
Telecommunications facilities	Communications, passenger security and passenger information facilities Condition monitoring facilities
Signalling and control facilities	Rail signal facilities Rail control system facilities

Every facility shall be used as a container of assets (including fixed or minor plant) that exist within the facility and applied within the facility asset register hierarchy based on the groupings and types.

Asset location classification shall be applied to the facility and all the assets it contains as shown in Figure 8 with an example shown in Figure 9.

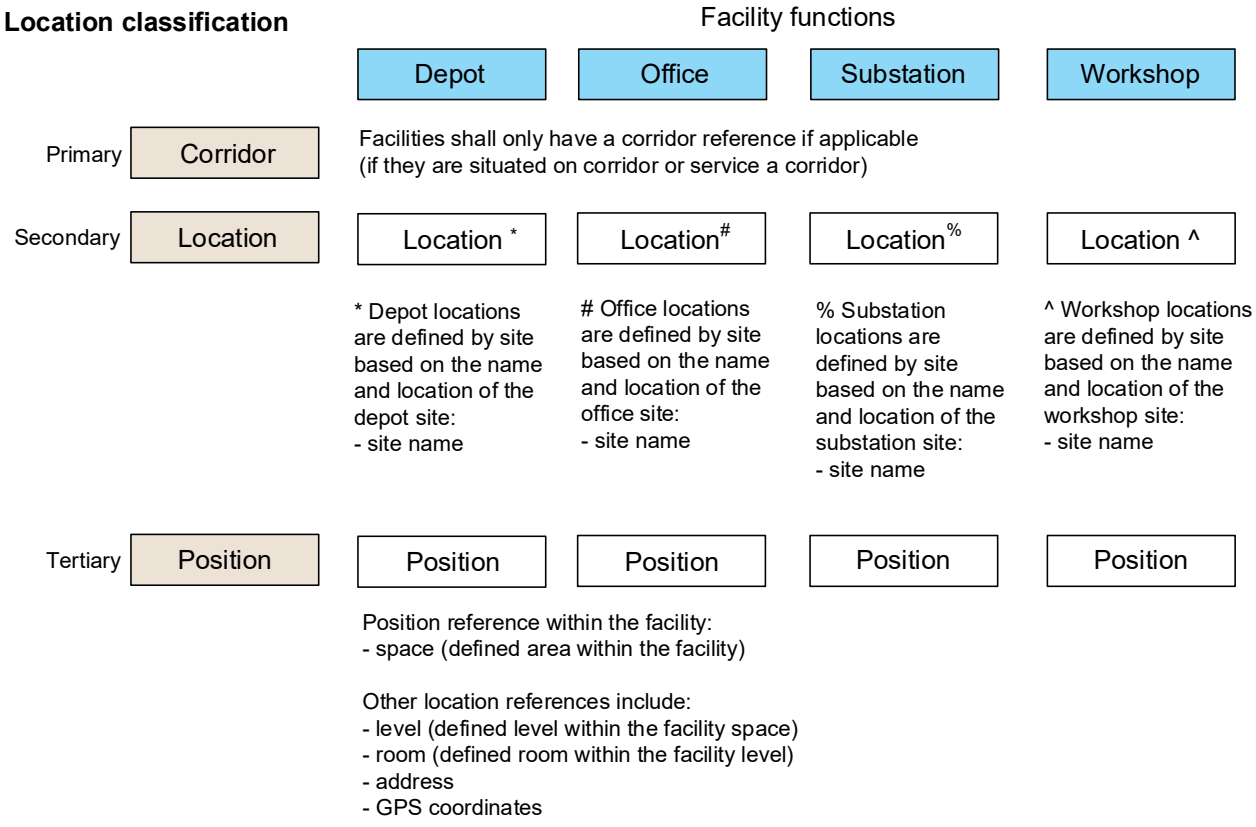


Figure 8 – Location classification for facility asset containers

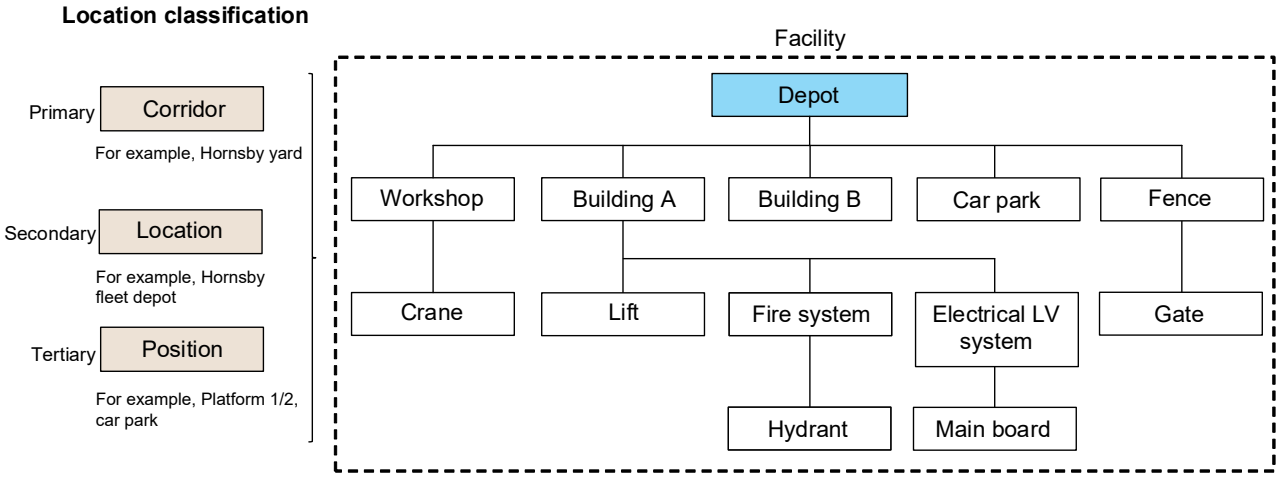


Figure 9 – Functional asset hierarchy for a facility with examples of physical location references applied as per the location classification

7.3.1 Corridor codes for assets within the facility container

The facility container, including all the assets contained within, shall have the applicable mode, corridor code and a general location code (minor facilities) or a site location code (major facilities) assigned.

Where a major facility services more than one corridor the primary corridor shall be applied to the facility (based on physical location and service contribution across corridors). The individual facility assets contained within the asset register hierarchy shall have the applicable mode and corridor code assigned.

7.3.2 Location codes for assets within the facility container

Where a facility (on or off corridor) is named or identified by the locality it is located in then it shall be assigned the location code of the locality.

Where a facility (on a corridor) is not named or identified by the locality it is located in then it shall be assigned the location code associated with the nearest interchange. All assets within this facility shall inherit the same location code.

Where a facility (off a corridor) is not named or identified by the locality it is located in then it shall be assigned a site location code based on the location of the locality. All assets within this facility shall inherit the same site location code.

Where a facility is located on a corridor it shall be assigned a site location code associated with the corridor location. All assets within this facility shall inherit the same site location code.

7.3.3 Position of assets within the facility container

Where assets exist within a facility container, a location description shall be provided that will typically include information to uniquely identify the instance of the asset in regard to its position. For example, a location description for a lift at a depot could be building A.

7.4 Feeder asset containers

Every instance of a feeder shall be used as a container of assets that exist along the feeder and applied within the feeder asset register hierarchy.

Feeders shall have the applicable mode, corridor code and a general location code (minor facilities) or a site location code (major facilities) assigned. See Sections 6.1 6.2 for further details.

Asset location classification shall be applied to the feeder and all the assets it contains as shown in Figure 10 with an example shown in Figure 11.

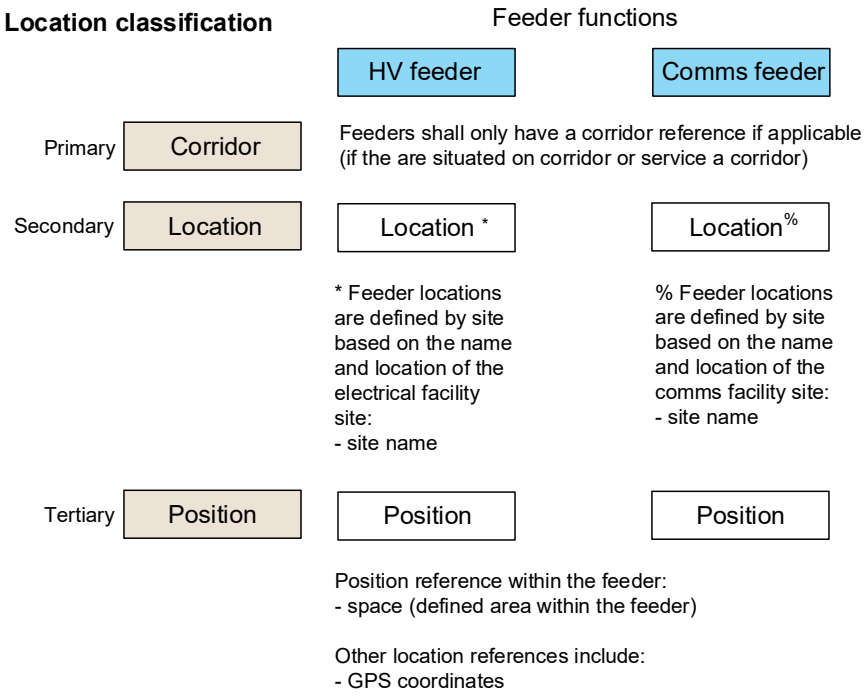


Figure 10 – Location classification for feeder asset containers

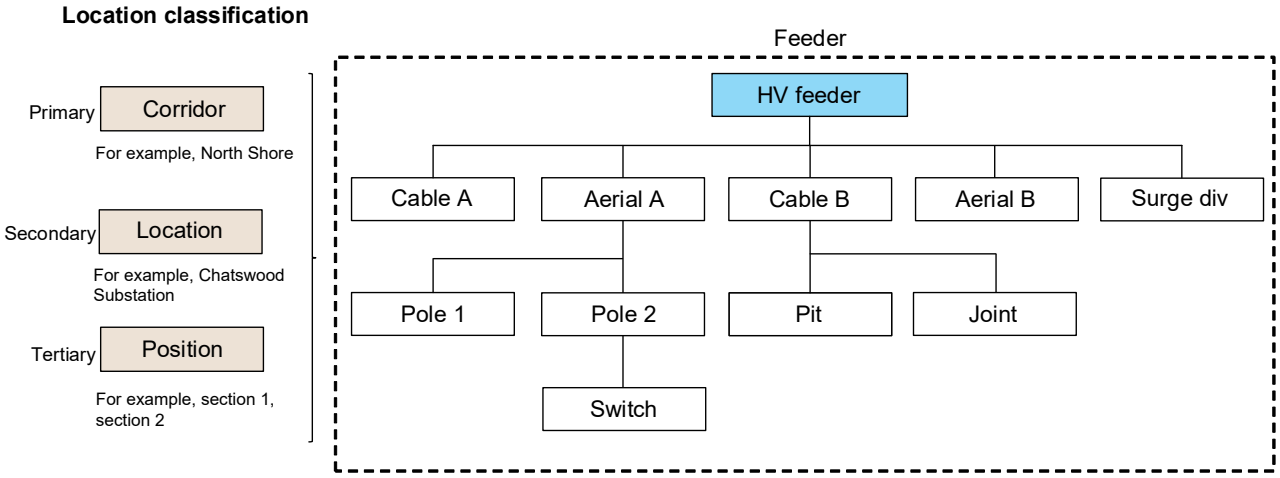


Figure 11 – Functional asset hierarchy for a feeder with examples of physical location references applied as per the location classification

7.4.1 Corridor codes for assets within the feeder container

Where a bulk supply feeder (cable or aerial) is supplying an electric substation (electrical facility), the feeder shall inherit the corridor code of the substation it is supplying as its corridor.

Other electrical, signalling and communications cables and aerial feeders shall use the corridor of the primary source end facility (electrical, signalling and communications) or the lowest pole number end (for aerial feeders) to determine the corridor of the cable or aerial. All assets associated with the cable or aerial feeder shall inherit the same corridor as the feeder.

7.4.2 Location codes for assets within the feeder container

Where a bulk supply feeder (cable or aerial) is supplying an electric substation (traction substation or non-traction system substation) the feeder shall be assigned the site location code of the substation it is supplying as its specific site location. The site location code shall be used instead of the general location code.

Other electrical, signalling and communications cables and aerial feeders shall use the site location as being the source end facility (electrical, signalling and communications) or the lowest pole number end (for aerial feeders) to assign the site location code of the cable or aerial. All other assets associated with the cable or aerial feeder shall be assigned the nearest site location code where possible.

7.4.3 Position of assets within the feeder container

Where assets exist within a feeder container, a location description shall be provided that will typically include information to uniquely identify the instance of the asset in regard to its position. For example, a location description for a circuit breaker could be section 2 ground level.

8 Fleet assets

Fleet assets shall be created in a structured hierarchy and contained within the fleet asset container (including mobile plant and equipment).

This asset container, defined as a separate asset class, enables a structured approach to navigation and location of assets within an asset register hierarchy. TS 01515.1 provides details on asset classes, asset containers and the asset register hierarchy.

Every instance of a fleet container shall be associated with an asset container function and aligned with a primary location classification to determine its home depot location.

To define where assets within each container are located, site locations shall be defined for major facilities that exist within a general location to provide a means to identify the specific site location of the following:

- mobile fleet (assigned as the home depot facility for the fleet)
- mobile plant and equipment (assigned as the home depot facility for the plant) for maintenance and capitalisation requirements.

8.1 Fleet asset containers

Fleet contains mobile assets and their associated systems or assemblies including rotables.

Each fleet container (including all the assets contained within) shall be assigned a site location code of the home depot facility.

Asset location classification shall be applied to the fleet and all the assets it contains as shown in Figure 12 with an example shown in Figure 13.

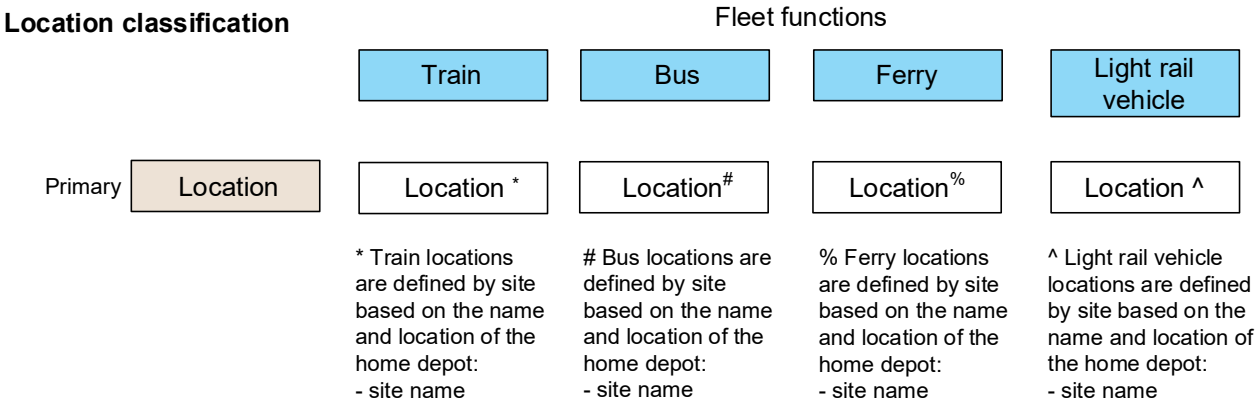


Figure 12 – Location classification for fleet asset containers

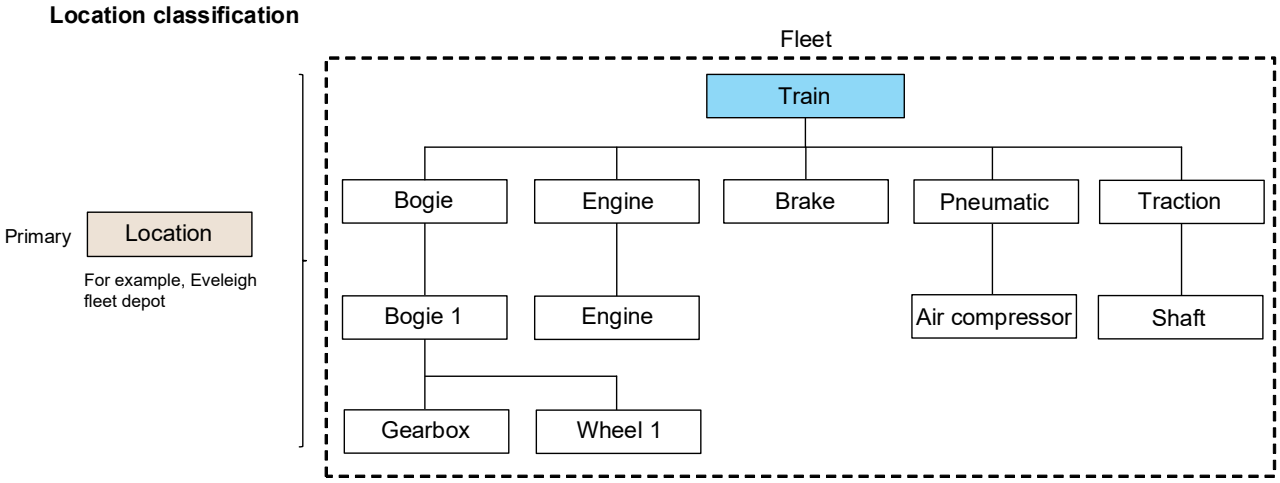


Figure 13 – Functional asset hierarchy for a fleet with examples of physical location references applied as per the location classification

8.1.1 Corridor codes for assets within the fleet container

No fleet assets, including items of mobile plant, shall have a corridor code assigned.

8.1.2 Location codes for assets within the fleet container

Where a fleet asset (including plant) is managed and controlled by its home depot (facility) it shall be assigned the site location code of the fleet depot facility as its home location. The site location code shall be used instead of the general location code.

8.1.3 Position of assets within the fleet container

No fleet assets, including items of mobile plant, shall have a location description assigned.