DEPARTMENT OF TRANSPORT AND REGIONAL SERVICES

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CODE OF PRACTICE
FOR THE
DEFINED INTERSTATE RAIL NETWORK

VOLUME 1

GENERAL REQUIREMENTS AND INTERFACE MANAGEMENT

MAY 2002

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Code of Practice for the Defined Interstate Rail Network

This Code does not supersede previous rules and instructions until the Code (in full or in part) is adopted and officially implemented by the network owner. Once implemented the Code will become mandatory. The Code is for application on the routes listed below.

QUEENSLAND

Acacia Ridge-Dutton Park-Fisherman Islands
Dutton Park-Roma Street
Acacia Ridge-NSW border (Border Loop)

NEW SOUTH WALES

Queensland border (Border Loop)-Maitland
Maitland-Broadmeadow
Broadmeadow-Scholey Street Junction-Morandoo Yard (BHP)
Berowra-Hornsby-North Strathfield-Chullora/Enfield (proposed freight route)
Chullora/Enfield-Sefton-Liverpool-Macarthur (proposed freight route)
Lithgow-Orange-Parkes-Broken Hill
Parkes-Stockinbingal-Cootamundra
Macarthur-Moss Vale-Goulburn-Cootamundra-Albury

*(**Note:** this does not include additional emergency diversionary routes that interstate services may use on occasions and for which details will be included in a separate section of the route standards in the Code).*

VICTORIA

Albury-Wodonga-Tottenham-West Footscray
West Footscray-South Dynon/North Dynon
South Dynon-Spencer Street
Tottenham-Newport-North Geelong-Gheringhap
Gheringhap-Ararat-Dimboola-Wolseley
South Dynon-Spencer Street-Flinders Street-Frankston-Long Island (broad gauge)

SOUTH AUSTRALIA/NORTHERN TERRITORY

Wolseley-Tailem Bend-Mile End-Islington-Dry Creek
Dry Creek-Gillman Junction-Port Adelaide-Glanville
Glanville-Pelican Point
Gillman Junction-Port Flat
Dry Creek-Crystal Brook-Coonamia-Port Pirie
Crystal Brook-Peterborough-Broken Hill
Coonamia-Port Augusta-Tarcoola-WA border
Tarcoola-Alice Springs
Port Augusta-Whyalla

WESTERN AUSTRALIA

SA border-Kalgoorlie-Avon-Midland
Midland-Forrestfield
Midland-East Perth terminal
Forrestfield-Cockburn-Kwinana
Cockburn-Fremantle

PREFACE

This Code of Practice for the Defined Interstate Rail Network was developed by the rail industry.

The Australian Transport Council agreed to an Inter-Governmental Agreement (IGA) for Rail Uniformity in November 1999. As a result of this agreement the Australian Rail Operations Unit (AROU) was established from 1 January 2000 to work with industry to finalise and implement a Code of Practice for the Defined Interstate Rail Network. The IGA also provided for the establishment of an Industry Advisory Committee (IAC) to assist the AROU. Prior to the establishment of the AROU an Industry Reference Group working under the auspices of SCOT Rail Group produced the first draft of a set of National Codes of Practice for Railways.

The work has been sponsored by the rail industry, the Australasian Railway Association, State, Northern Territory and Commonwealth Governments.

This Code includes Volumes for each operational and engineering discipline and a Glossary defining the terminology used.

The General Requirements and Interface Management Code is a common document relevant to all railway disciplines. The other Volumes in the Code of Practice address the detailed principles, guidelines and mandatory requirements related to the individual disciplines for the range of railway activities comprising the defined interstate rail network.

The Commonwealth Government through the Commonwealth Department of Transport and Regional Services is responsible for administering issues related to the update and maintenance of the Code based on advice from industry. Code Management procedures for the Code of Practice for the Defined Interstate Rail Network are available from the Department.

The Code of Practice has been developed specifically to meet the uniformity requirements for the Defined Interstate Rail Network (DIRN). This Network excludes any yards, sidings and terminals, which may be associated with the Network by way of access, geographic location or any other reason. The practices detailed provide three (3) levels of information as follows:

(a) Principles providing guidance and information to railway organisations on issues that should be considered.

(b) Guidelines that provide guidance on one means of meeting some of the requirements of AS 4292.

(c) Mandatory requirements necessary to enable the operational objectives of the 1998 report titled "Study of Rail Standards and Operational Requirements" to be reached.

The principles, guidelines and mandatory requirements have not been developed for use by other railway networks and are not relevant to special application railways such as sugarcane and heavy haul railways, which are constructed, operated and maintained in ways that meet the specific needs of those operations. In these cases special operating and technical requirements and standards, not provided for in this Code of Practice, will normally apply to accommodate the particular environments in which they operate.

The mandatory requirements for the DIRN do not require application retrospectively and are generally applicable in the case of significant upgrading and modification, new construction or in the implementation of new systems. Infrastructure and rollingstock built to standards in existence prior to the publication of this Code of Practice may be restricted in their use. Other practices deemed mandatory for the DIRN would require a period of time to provide for implementation, particularly in the case of operational and safeworking systems. The staged implementation of these requirements will be the subject of an industry based implementation plan developed in association with the Australian Rail Operations Unit.

The Code of Practice includes significant sections that are notated as “To Be Determined” or “To Be Inserted”, which with amendments to existing clauses will be the subject of continuing development.

CODE OF PRACTICE VOLUMES

The following details the Code of Practice for the Defined Interstate Rail Network by Volume and Part number:

Volume 1 General requirements and interface management

Volume 2 Glossary

Volume 3 Operations and safeworking
- Part 1: Rules
- Part 2: Route standards

Volume 4 Track, civil and electrical infrastructure (known as Infrastructure Code)
- Part 1: Infrastructure management
- Part 2: Infrastructure elements
- Part 3: Infrastructure guidelines

Volume 5 Rollingstock
- Part 1: Interface and general requirements
- Part 2: Freight rollingstock
- Part 3: Locomotives
- Part 4: Passenger cars
- Part 5: Other on-track vehicles

SOURCE DOCUMENTS

During the preparation of this Code of Practice the following principle source documents were used:

Australian Standards

AS
4292 Railway safety management
4292.1 Part 1: 1995 General and interstate requirements
4292.2 Part 2: 1997 Track, civil and electrical infrastructure
4292.3 Part 3: 1997 Rollingstock
4292.4 Part 4: 1997 Signalling and telecommunications systems and equipment
4292.5 Part 5: 1997 Operational systems
4292.6 Part 6: 1997 Railway interface with other infrastructure

4308: 2001 Recommended practice for the collection, detection and quantification of drugs of abuse in urine

1470: 1986 Health and safety at work

AS/NZS
4360: 1999 Risk management
4602: 1999 High visibility safety garments

Medical Standards Handbook—Guidelines for medical practitioners conducting examinations for Australian rail organisations, Australian Rail Operations Unit (under development)

Australian Code for the Transport of Dangerous Goods by Road and Rail Sixth Edition 1988

CODE CHANGE PROCEDURES

Ongoing change procedures for the Code of Practice for the Defined Interstate Rail Network are available from the Department of Transport and Regional Services.

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FOREWORD

The Australian rail industry is committed to maximising benefits to the transport industry and the general community through a number of initiatives. It aims to ensure rail is the preferred transport mode by providing where possible the most efficient and effective transport system available for the carriage of passengers and freight.

The Code of Practice for the Defined Interstate Rail Network is one such initiative. It provides the following:

(a) Uniform approach to the definition of operational standards.

(b) Safe operating environment where infrastructure, rollingstock and operating systems are in accord with the principles defined herein.

(c) Uniform basis with which to comply with AS 4292.

(d) Basis for assisting the process of mutual recognition of rail safety accreditation.

(e) Basis for developing investment decisions.

Although the primary driver for the development of this Code of Practice has been the uniformity issue relating to the competitiveness of the rail mode, it supports an underlying aim to ensure railways continue to provide an appropriate level of safety. Owners and operators need to address the requirements of AS 4292. Practices described in this Code of Practice have been developed with regard to the requirements of AS 4292, however it does not cover these requirements in their entirety. The principles, guidelines and requirements herein may be used as a basis on which to meet the requirements of both AS 4292 and the rail safety regulations in each jurisdiction.

The Code of Practice is aligned with the requirements prescribed in AS 4292, Rail safety management with practices for railway systems and components based where applicable on the life cycle approach adopted in AS 4292. It addresses the following phases of the life cycle:

(a) Design.

(b) Construction and Implementation.

(c) Commissioning.

(d) Operations.

(e) Monitoring and Maintenance.

(f) Modification.

(g) Decommissioning and Disposal.

The principles, guidelines and mandatory requirements described in this Code of Practice are generally based on the collective experience and practices of the organisations participating in their development and proven to be safe by usage over a long period of time. Prior to publication, the Code of Practice was subjected to extensive industry review and consultation. The specific standards and practices described in this Code of Practice cannot alone ensure an acceptable level of quality. Each owner and operator and their respective contractors need to implement systems and procedures for management and supervision in all phases of railway operations.

Users of the Code of Practice should note there are factors beyond those covered that need consideration in the final design and specification of railway systems and components. The Code of Practice should be used in conjunction with competent operational and engineering judgment. It is imperative that each user reviews the information herein in the specific context of the intended application in consultation with the relevant regulatory bodies, operators, owners and rail access providers.

1 SCOPE AND IMPLEMENTATION

1.1 INTRODUCTION

The Foreword to AS 4292 Parts 2 to 5 - 1997 is as follows:

"FOREWORD

A means of complying with this Standard may be by an organisation entering into a commitment to conform to a code of practice which has been deemed by an appropriate authority to comply in respect of the organisation's type of operation. It is envisaged that in time, a range of codes of practice applicable to specific railway activities may be developed to address different types of railway operation such as tramways, tourist/heritage, short haul and advanced technology railways, as well as interstate and other main line operations."

This Code of Practice has been developed as a means of complying with parts of AS 4292 in the context of the Defined Interstate Rail Network.

In conformity with AS 4292, before applying the Code to individual railway operations it is always necessary to determine the level of risk the application of the Code imposes on such railway operations. As with AS 4292, in making this determination at least the following matters are to be taken into account:

(a) The role of the railway.

(b) The function in the organisation of the person, corporation, contractor or supplier who is applying the Code.

(c) The commercial agreements between owners, operators and functional areas.

(d) The promotion of commercial and technological innovation.

(e) Existing safety procedures and practices.

(f) The need to determine which life cycle phases are applicable to an organisation.

1.2 APPLICATION FRAMEWORK

(a) Subject to any relevant legislation, the Code of Practice only supplements AS 4292. In the event of any inconsistency between:

(i) the application of any part of AS 4292 and the Code; or

(ii) the interpretation of a provision of AS 4292 with the Code or a provision of the Code,

AS 4292 is to prevail.

(b) Any procedures or training manuals prepared by a railway organisation are to be read subject to the following order of precedence:

(i) AS 4292; and

(ii) the Code.

(c) The Code of Practice for the Defined Interstate Rail Network (hereafter called the "Code") is aimed at those involved in management and work activities associated with railways on the Defined Interstate Rail Network. In this context the intention of the Code is to provide a more unified, harmonised and efficient operation than that which existed prior to the publication of the Code. The Code seeks to facilitate trains of differing sizes, characteristics, types, and purposes with differing owners and train managers to operate on and between the rail networks that constitute the Defined Interstate Rail Network giving one type of rail operation no advantage over that of another whilst at the same time providing capacity for efficiency and innovation.

(d) The Code sets out principles, guidelines and mandatory requirements aimed at providing a uniform approach to rail operations and supports the provision of safe and efficient infrastructure, rollingstock and operating systems.

(e) Where adopted, the principles, guidelines and mandatory requirements described in the Code **shall** be incorporated into the management systems of the owner or operator, by implementing standards and procedures based on these practices. It is recommended that a review of the Code precede its adoption to ensure compatibility with the existing systems.

(f) The Code applies to work activities undertaken in all functional areas of the railway. The uniformity and underlying safety management principles are stated. Uniform requirements for health and fitness, competency, management and associated issues for rail workers are described. Requirements for interface coordination management are also described, including identification of issues for which interface coordination should be implemented.

2 CODE ADMINISTRATION

The Commonwealth Government through the Commonwealth Department of Transport and Regional Services is responsible for administering issues relating to the update and maintenance of the Code based on advice from industry.

3 PRINCIPLES OF THE CODE

3.1 UNIFORMITY PRINCIPLES

The uniformity principles on which the Code is based are as follows:

(a) Assisting interoperability and maximisation of rail competitiveness by defining uniform operational and technical standards for the Defined Interstate Rail Network.

(b) Providing assistance to the process of mutual recognition of rail safety accreditation.

(c) Providing a uniform basis for developing investment decisions on the Defined Interstate Rail Network.

(d) Providing a uniform basis with which to comply with elements of AS 4292.

3.2 UNDERLYING SAFETY PRINCIPLES

3.2.1 General management principles

The underlying safety general management principles on which the Code is based are as follows:

(a) Identification and management of risk.

(b) Ensuring that emergencies and incidents can be properly managed.

(c) Ensuring that interfaces between different organisations and organisational elements are properly defined and managed.

(d) Protection of passenger, worker and public health and safety.

(e) Protection of property from damage.

Nothing in any network owner or operator's safety management system **shall** allow or encourage any actions contrary to these principles.

3.2.1.1 *Implementation*

Implementation entails compliance with safety principles in relation to the following:

(a) Operational aspects.

(b) Infrastructure aspects.

(c) Rollingstock aspects.

(d) Interfaces with other transport modes.

3.2.1.2 *Operational aspects*

These include:

(a) Ensuring train integrity before and during its journey.

(b) Maintaining safe train separation.

(c) Protecting workers moving on or about the track.

(d) Ensuring the route is safe to operate over, including preventing movement of points under a train or when it is approaching.

(e) Protecting against over-speed operation.

(f) Minimising human error in formulation, transmission and execution of authorities and instructions.

3.2.1.3 *Infrastructure aspects*

These include:

(a) Ensuring the integrity of the track and other infrastructure.

(b) Ensuring that both railway traffic, and the track and other infrastructure have compatible operating parameters.

(c) Ensuring the safety of persons and property on or adjacent to the railway.

(d) Communicating operating parameters, requirements and restrictions by adequate and effective means.

3.2.1.4 *Rollingstock aspects*

These include:

(a) Ensuring the integrity of rollingstock.

(b) Ensuring the compatibility with track and other infrastructure parameters.

(c) Ensuring safe retention of loads on wagons.

(d) Provision of adequate passenger and worker protection in the event of derailment, collision or other unscheduled events.

(e) Provision of reliable vehicle couplings, brake systems, and brake and other connections between vehicles.

3.2.1.5 *Interfaces with other transport modes*

Recognition of the responsibilities of the interfacing parties in respect of matters such as:

(a) Minimising risk at level crossings.

(b) Ensuring the integrity of rail-over or rail-under structures, including over height protection for road-under-rail structures.

(c) Where practicable, minimising the risk of track obstructions arising from accidents on nearby roads or other transport routes, or involving services (eg. utilities).

4 DEFINED INTERSTATE RAIL NETWORK

The Defined Interstate Rail Network with respect to application of this Code is depicted in Figure 1. A more detailed description is given in the Operations and Safeworking Code.

Route standards, operating systems, other location dependent infrastructure information and vehicle and train operating standards for use on the Defined Interstate Rail Network are defined in the Operations and Safeworking Code.

The Defined Interstate Rail Network includes:

(a) all main lines and associated crossing loops; and

(b) track sections capable of carrying narrow (1067 mm), standard (1435 mm) and broad (1600 mm) gauge rollingstock on either single or multi-gauge tracks;

on the routes shown in Figure 1, but excludes all associated yards, sidings and terminals.

The individual Volumes making up this version of the Code are in some cases restricted to the consideration of standard gauge only, for example Part 2 of the Infrastructure Code.

5 STRUCTURE AND APPLICATION

5.1 VOLUME 3: OPERATIONS AND SAFEWORKING

(The Operations and Safeworking Code)

5.1.1 General

The approach used in Volume 3 of the Code to address safeworking is based on authorities as defined in AS 4292.5. The authorities are:

(a) Proceed Authority.

(b) Conditional Proceed Authority.

(c) Proceed Restricted Authority.

(d) Work Authority.

(e) Shunt Authority.

(f) Local Possession.

(g) Track Occupancy Authority.

(h) Track Work Authority.

This approach enables rules for operating within safeworking systems that use either signalling and/or communications technologies, to be explained in terms that focus on their similarity of purpose and point to the differences when it is important to do so. In the same way, the Code sets out common terms and definitions to describe the components of operations and safeworking, and recommends the adoption of common trackside signs, safeworking forms and radio protocols for use on the Defined Interstate Rail Network.

5.1.2 Structure

The Operations and Safeworking Code is structured to address safeworking principles, route standards and rules for interaction between rail safety workers with each other and within the safeworking systems as follows:

(a) **Volume 3 Part 1: Rules** This Part contains operations, principles and issues over which coordination should be established, and addresses specific operations and safeworking rules for train controlling, driving, and track working.

(b) **Volume 3 Part 2: Route standards** This Part defines operating limits on the Defined Interstate Rail Network and details the factors that determine those limits. This information enables the train operator to design transport operations and to construct trains to conform to the standards for operation on the Defined Interstate Rail Network routes.

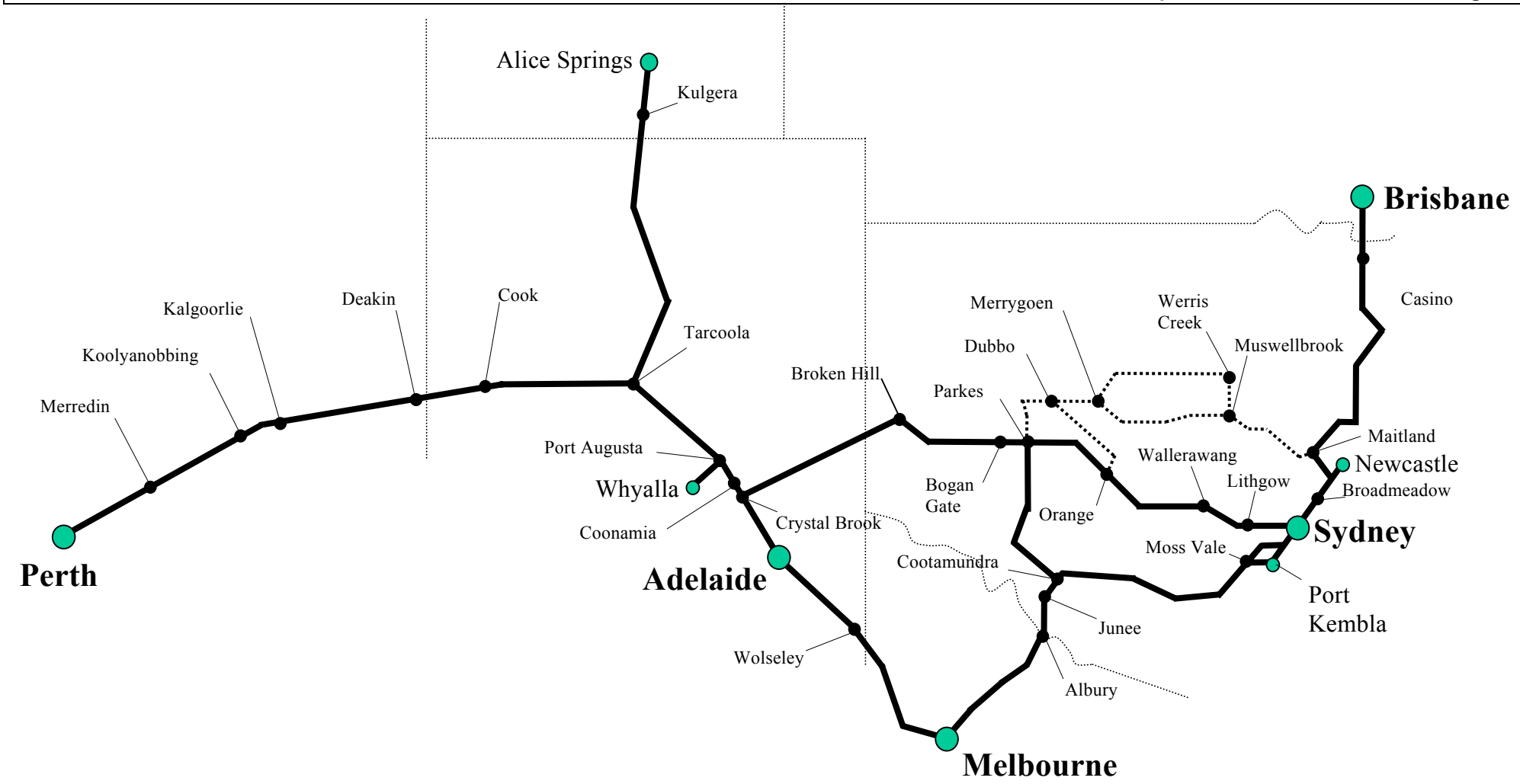

Figure 1 Routes in the Defined Interstate Rail Network

NOTES:

[1] The Defined Interstate Rail Network excludes all yards, terminals and sidings.

[2] Specific detail of the Defined Interstate Rail Network is given in the Operations and Safeworking Code, Volume 3, Part 2.

[3] Diversionary routes indicated by dashed lines may be used in emergency or similar situations. Due to infrastructure limitations operational restrictions may apply.

5.1.3 Application

The Operations and Safeworking Code is for application on the Defined Interstate Rail Network.

5.2 VOLUME 4: TRACK CIVIL AND ELECTRICAL INFRASTRUCTURE

(The Infrastructure Code)

5.2.1 General

The Infrastructure Code provides principles, guidelines and mandatory requirements for the management of infrastructure on the Defined Interstate Rail Network. It is primarily directed at owners of infrastructure, and their contractors whom may provide management responsibilities commensurate with the responsibilities of an owner as defined by AS 4292.

5.2.2 Structure

The structure of the Code is based on the life cycle approach used in AS 4292, and comprises the following:

(a) Volume 4, Part 1: Infrastructure management.

(b) Volume 4, Part 2: Infrastructure principles.

(c) Volume 4, Part 3: Infrastructure guidelines.

5.2.3 Application

The Infrastructure Code applies to:

(a) Physical, operational and safety aspects of electric traction infrastructure that relate to the safe and successful operation of non-electric rollingstock in electrified areas, see Note 1. This includes, to a limited extent, the associated physical, operational and safety interfaces between electrical infrastructure, other infrastructure, rollingstock and railway operations. It does not include the electrical characteristics and performance requirements of the electrical systems themselves, the interfaces with electric trains or requirements for controlling access to live equipment by the public.

(b) Track and civil infrastructure practices relevant to standard gauge track constructed using sleepers in open ballasted track. Many of the practices detailed may be applicable to rail with other supporting structures however the applicability of specific clauses requires competent professional consideration.

Track and civil infrastructure guidelines and mandatory requirements apply to the specific operating regime for the Defined Interstate Rail Network, as defined in Part 1 of the Infrastructure Code.

Where the guidelines in the Infrastructure Code are adopted it is intended that they be applied as a whole, see Note 2. If practices other than those described in this Code are implemented they **shall** comply with the requirements of AS 4292 and should be based on the Principles described in the Infrastructure Code. The compatibility of such practices with all affected aspects of the engineering and operational systems should be ensured when only part of this Code is adopted. If the type or condition of the infrastructure falls outside the scope of, or there is non-compliance with the guidelines in the Infrastructure Code the owner **shall** manage the risk in accordance with AS 4292.

NOTES:

[1] Railway electrical infrastructure considered in writing this Code was confined to 1500V dc, 25kV ac, and 25/50kV ac overhead systems.

[2] The practices set out in the Infrastructure Code for each phase of the infrastructure's life cycle are often inherently related with the recommendations made in other phases of the life cycle. In particular the

process used for design of infrastructure has a direct bearing on the permissible conditions and deterioration rate of the infrastructure, and therefore on the way in which it should be monitored (inspected and assessed) and maintained.

[3] Yards, terminals and sidings have not been specifically addressed in the Infrastructure Code.

5.3 VOLUME 5: ROLLINGSTOCK

(The Rollingstock Code)

5.3.1 General

The Rollingstock Code supersedes both the ANZR Manual of Standards and Recommended Practices and the ROA Manual of Engineering Standards and Practices, and includes references to the Manual of Standards and Recommended Practices issued by the Association of American Railroads (AAR).

The Code provides engineering and operational practices for rail operators and their clients, vehicle owners, rollingstock designers, manufacturers, maintainers, and testing and inspection bodies. These practices provide accepted standards of design, construction and performance in terms of service life and level of safety.

5.3.2 Structure

The Rollingstock Code is structured to address the above issues as follows:

(a) *Composition of the Code*. The Code comprises separate Parts as follows:

(i) Volume 5, Part 1: Interface and general requirements;

(ii) Volume 5, Part 2: Freight rollingstock;

(iii) Volume 5, Part 3: Locomotives;

(iv) Volume 5, Part 4: Passenger cars;

(v) Volume 5, Part 5: Other on-track vehicles.

(b) *Contents.* The Code contains the following:

(i) *Principles*

Principles describe fundamental requirements of rollingstock and are described in Part 1: Interface and General Requirements.

(ii) *Mandatory requirements*

Part 1 describes interface mandatory requirements for vehicles operating on the Defined Interstate Rail Network.

Parts 2, 3, 4 and 5 are vehicle type specific. They prescribe additional mandatory requirements for design, construction and performance for such vehicles operating on the Defined Interstate Rail Network.

Notes to tables and figures that are expressed in mandatory terms **shall** be applied.

(iii) *Guidelines*

Each of the Parts of the Rollingstock Code also provides guidelines that are considered to provide the optimum method of ensuring compliance with the mandatory requirements. The vehicle-specific Parts also prescribe the inspection and maintenance limits and practices that provide accepted levels of reliability and performance.

5.3.3 Application

The Rollingstock Code describes engineering principles, standards and data applicable to the design, construction, testing, inspection and maintenance of all new, rebuilt and substantially modified railway rollingstock (and associated equipment) operating on the Defined Interstate Rail Network. The Rollingstock Code also includes practices related to

inspection, maintenance and repair that are necessary to maintain these vehicles in an acceptable service condition.

Compliance with the practices described in this Code is essential for vehicles engaged in operation over the Defined Interstate Rail Network. Such compliance also facilitates assessment of the acceptability and compatibility of vehicles operating between and within the other rail networks traversed by interstate rail operators.

For some applications, additional requirements will be necessary to meet acceptable levels of performance.

6 RAIL SAFETY WORKERS

6.1 GENERAL

Organisations **shall**:

(a) Identify rail safety related worker functions undertaken within their operations. These include but are not limited to the following:

  (i) driving and operation of trains;

  (ii) controlling and signalling the movement of trains;

  (iii) working on track infrastructure or rollingstock;

  (iv) shunting and terminal operations; and

  (v) other activities that require persons to be on or near the track that require either training or supervision.

(b) For each of the functions identified, determine for each individual worker the following:

  (i) capacity to perform the function; and

  (ii) competence.

(c) For each of the functions identified, specify and maintain the following:

  (i) medical standards;

  (ii) operational and safeworking competence; and

  (iii) engineering systems competence.

6.2 GUIDELINES FOR MEDICAL STANDARDS

Each organisation is responsible for ensuring that workers are medically capable of undertaking nominated functions in a safe manner.

Medical Standards Handbook—Guidelines for Medical Practitioners Conducting Examinations for Australian Rail Organisations (under development) addresses indicative capacities required for those functions identified above (see Note). These guidelines are intended to provide organisations with indicative information on medical standards associated with typical rail functions. Organisations may differ in the detailed application of the guidelines.

Where the standards are not met during clinical tests, practical tests may be used to identify if a person may continue to operate within the specified function.

NOTE: The Medical Standards Handbook does not necessarily address all functions carried out in any organisation.

6.3 DRUG AND ALCOHOL CONTROL

Zero alcohol and drug impairment policies **shall** be adopted by all organisations operating on the Defined Interstate Rail Network.

This means rail safety workers **shall not** breach the prescribed concentration of alcohol and be free from the influence of other drugs while about to or while carrying out rail safety related worker functions on the Defined Interstate Rail Network.

Organisations **shall** implement systems to effect the policy. These measures **shall** include the following:

(a) Intermittent or random testing of all rail safety workers.

(b) Testing when it is suspected that a rail safety worker is attempting to start work under the influence of alcohol or other drugs.

(c) Testing after incidents or accidents where the involvement of alcohol or other drugs could be a factor.

Organisations' systems **shall** ensure compliance with relevant legislation and relevant Australian Standards ie. AS 4308, Recommended practice for the collection, detection and quantification of drugs of abuse in urine.

6.4 FATIGUE MANAGEMENT

Fatigue **shall** be recognised as a workplace hazard and fatigue management policies **shall** be adopted by all organisations operating on the Defined Interstate Rail Network.

Organisations shall manage the risks associated with the hazard of fatigue in accordance with AS 4360 "Risk Management".

Organisations shall implement systems to effect the policy. These measures should include the following:

(a) A policy that recognises the shared responsibility of management and employees, details risk minimising strategies and clearly defines responsibilities for managing fatigue.

(b) Training and education programs for employees involved in shift work, including those working shifts, rostering staff and management.

(c) Systems to determine levels of fatigue associated with hours of work including overtime and the maintenance of records for audit purposes.

6.5 WORKER COMPETENCIES

6.5.1 Operational and safeworking competence

Organisations **shall** implement systems for the development and maintenance of worker competence that take into account the following:

(a) Rail safety workers **shall** be certified as competent in the relevant safeworking requirements described in the Operations and Safeworking Code (see Note*)*.

(b) Safeworking assessments should be conducted according to the level of risk arising from the work carried out for each rail safety worker. The maximum period between assessments for any rail safety worker **shall** be no longer than three years.

(c) Where the requirement for assessment exceeds the specified period by more than three months the rail safety worker not completing the re-assessment **shall not** carry out any operational and safeworking functions.

(d) A rail safety worker's safeworking competence **shall** be re-assessed, according to the level of risk arising, where the worker has not engaged in performing operational safeworking for a prolonged continuous period and be withdrawn if the continuous period exceeds twelve months. Reinstatement shall occur once re-assessment is successfully completed.

(e) A rail safety worker's competence **shall** cease to be recognised where such competence has been withdrawn or suspended by any assessment organisation.

NOTE: Nationally accredited Transport and Distribution Training Australia training and assessment packages for applying the Code of Practice for the Defined Interstate Rail Network to Operations and Safeworking have been prepared and can be customised to suit implementation requirements and the needs of individual organisations.

6.5.2 Route or area specific competence

Organisations **shall** implement systems for the development and maintenance of route or area specific competencies that take into account the following:

(a) For driving and operation of trains, the following:

(i) Network Route competencies (route knowledge);

(ii) yard competencies for pertinent yards, terminals and sidings on or adjoining the Network; and

(iii) communication protocols and interfacing requirements.

(b) For controlling and signalling the movement of trains, the following:

(i) control room, board or panel, or signal box competency; and

(ii) communication protocols and interfacing requirements.

(c) For work on infrastructure or rollingstock, the following:

(i) route, yard, infrastructure and rollingstock knowledge as applicable for the work to be undertaken; and

(ii) communication protocols and interfacing requirements.

(d) For shunting and terminal operations, the following:

(i) yard and infrastructure knowledge as applicable for the work to be undertaken; and

(ii) communication protocols and interfacing requirements.

(e) For any other activities occurring on or near the track, the following:

(i) track awareness;

(ii) electrification awareness; and

(iii) communication protocols and interfacing requirements.

6.5.3 Engineering systems competence

Organisations **shall** implement systems for the development and maintenance of worker competence that take into account functions associated with the design, construction, commissioning, monitoring and maintenance, decommissioning and disposal of infrastructure and rollingstock.

6.6 RAIL SAFETY WORKERS IDENTIFICATION

When working on or near the running lines rail safety workers **shall** provide identification information when requested by any authorised person. The information **shall** include the following:

(a) Name.

(b) Employment organisation.

(c) Functions for which competence has been attached.

(d) Functions being performed.

The information should be contained on an employee photo identification card.

6.7 SAFEWORKING EQUIPMENT

6.7.1 Personal protective equipment

Personal protective equipment **shall** be used when present on or near the track in accordance with this Clause (see Note 1). As a minimum the following personal protective equipment **shall** be used when on or near the track:

(a) Orange–High visibility safety clothing (see Note 2).

(b) Safety footwear.

Other personal protective equipment as required for the purposes of workplace health and safety **shall** also be used, including that required for working in electrified areas.

NOTES:

[1] Refer to AS 1470, Health and safety at work—Principles and practices.

[2] For requirements and recommendations regarding the work environment refer to AS/NZS 4602, High visibility safety garments.

6.7.2 Safeworking forms

Organisations **shall** put in place systems for the management of safeworking forms to ensure the following:

(a) That there is an adequate supply and provision of safeworking forms, including those carried on locomotives, track vehicles and machines, and those held within control rooms, signal boxes, stations, and other locations as appropriate.

(b) That safeworking forms are correctly completed, submitted, collected and retained.

(c) That safeworking forms are retained for a minimum of four weeks. During this period they **shall** be made readily available for request by, or exchange between, organisations allowing comparisons with other documents and recordings, for example train graphs and voice recordings. Following this period the completed forms **shall** be managed by the organisation in accordance with their own requirements and legislation.

6.7.3 Safeworking keys

Organisations **shall** put into place systems to ensure the appropriate safeworking keys are formally issued and withdrawn to or from rail safety workers taking into account the following:

(a) Whether the worker has safeworking certification, route and yard competence.

(b) Whether the worker needs the safeworking keys to carry out rail safety work.

(c) The need to withdraw the keys upon the worker's termination or completion of employment or contract with the organisation.

7 SAFETY PERFORMANCE

7.1 SAFETY COMPLIANCE MONITORING

Each organisation **shall** implement systems to monitor operational safeworking activities and engineering systems safety that take into account the following:

(a) The conducting of formal internal audits of procedural systems and physical assets within appropriate intervals.

(b) The regular observation of rail safety workers undertaking activities on the job.

(c) The initiation of corrective action where there is evidence of non-compliance.

(d) The prompt exchange of information between affected organisations when serious non-compliance is detected.

(e) The maintenance of safety compliance monitoring records.

7.2 SAFETY PERFORMANCE REVIEW

Organisations **shall** implement systems to review safety performance including incident data, reports and recommendations.

Problems identified during safety performance reviews **shall** be subject to appropriate corrective action and post review to ensure their effectiveness.

Organisations **shall** implement and participate in joint safety performance review meetings where incidents require corrective actions that may affect more than one organisation.

8 INTERFACE COORDINATION

8.1 INTERFACE COORDINATION PLAN

8.1.1 General

An Interface Coordination Plan (see Note) (hereafter in this Clause called the Plan) **shall** be implemented in accordance with AS 4292. The Plan **shall** be agreed upon by those parties involved in safety related functions associated with the running of the railway, and may be between two or more parties. The Plan should form a part of the binding agreement between the parties involved.

The two main functions of the Plan are to—

(a) Define the responsibilities of each party involved, and the information that is required to be communicated across the interface.

(b) Ensure the compatibility of the physical assets and procedural systems of each functional area of the railway.

The Plan should be developed in conjunction with the implementation of new, or modification of existing, systems and equipment, such that due consideration of the compatibility issues can be addressed from the point of conception by each party to the Plan.

The Plan **shall** describe the activities of each functional area (refer AS 4292) in which each party will be involved, the subject matter that has been considered, and the interfaces across which coordination has been established.

NOTE: The functions of ensuring compatibility of operational and engineering systems and the communication of information are independent of organisation. In a fully "vertically integrated" railway this may be implemented solely through internal management systems.

8.1.2 Requirements and recommendations of the Plan

The Plan **shall** provide for the following:

(a) A full description of the scope of the railway operation being undertaken and all parties involved.

(b) Identification of the interface issues (refer to Clause 8.1.5) between the organisations.

(c) Clear delineation of the responsibilities of each party in relation to the interface issues and identification of the data to be communicated by each party (see Note).

(d) Identification of the nominated first point of contact for each party with respect to the Plan for—

  (i) the provision of data to other organisations; and

  (ii) the assessment of the engineering and operational systems compatibility.

(e) Identification of procedures for—

(i) the exchange and communication of interface data and information including distribution lists, confidentiality issues (see Clause 8.1.3) and dispute resolution procedures;

(ii) the sharing of good practice, issues of concern and relevant safety information;

(iii) the reporting and investigation of incidents and notifiable occurrences, including reporting protocol and responsible persons in accordance with AS 4292.1;

(iv) the auditing of each party's compliance with the Plan;

(v) document control; and

(vi) review of the Plan.

(f) Identification of related documentation, for example supporting standards.

Terminology used in the Plan should be as described in the Glossary to the Code of Practice for the Defined Interstate Rail Network. Other terminology used should be defined in the Plan where the meaning may be subject to reader interpretation or is not common railway terminology.

NOTE: The responsibilities that may be defined by contractual arrangements between organisations may not necessarily be split along discipline lines as represented by this Code of Practice for the Defined Interstate Rail Network.

8.1.3 Confidentiality issues

It is recognised that there are a number of issues with respect to the confidentiality of information which may arise in the preparation and implementation of an Interface Coordination Plan, in particular the passing on of information to a competitor. It **shall not** be acceptable for operators or their contractors to refuse information to network owners and vice versa on the grounds of confidentiality where that information is required to ensure operational or engineering compatibility. Procedures for the handling of confidential information should be agreed in these instances.

8.1.4 Implementation of the Plan

The Plan should be implemented through standards and procedures for assessing the compatibility of engineering and operational systems identified in the Plan. Implementation of the Plan should include:

(a) Determination and documentation of the functional parameters (ie. infrastructure route standards, vehicle and train operating standards) for the railway operation. For the Defined Interstate Rail Network these functional parameters are defined by the Route Standards in the Operations and Safeworking Code (Volume 3, Part 2). The functional parameters should include those issues identified in Clause 8.1.5.

(b) Identification of the specific engineering and operational standards and procedures that each party (ie. network owner or operator) is committed to conform to through the Plan. These standards and procedures should identify practices for handling infringements of the functional parameters as well as conditions of infrastructure or rollingstock that require temporarily restricted use.

(c) Identification of procedures for the communication of the permissible functional parameters of operation (permanent and temporary) to all relevant persons and organisations as identified in the Plan on an ongoing basis.

8.1.5 Interface issues

The interface issues that need consideration in the development of the Interface Coordination Plan are detailed in Appendix A, see Note, which also provides a reference to the relevant Code in the Series dealing with specific issues on either side of the interfaces.

NOTE: Interface issues related to the signalling and telecommunications systems have not been included in Appendix A, because at present a Code of Practice for these systems has not been published. Network owner and operator responsibilities with respect to the management of interfaces with these systems are however set out in AS 4292.

8.2 TRACK ACCESS AGREEMENTS AND RAIL SAFETY ACCREDITATION

Access agreements negotiated between an network owner and a train operator specify the terms and conditions of access to the Defined Interstate Rail Network. Reference should be made to the functional parameters agreed through the implementation of the Interface Coordination Plan.

Access agreements should identify the process for negotiated—

(a) Proposed timetable for trains to have access to the Defined Interstate Rail Network.

(b) Class of each train including its operational performance restrictions and limits.

The network owner and operator should arrange and receive accreditation from the rail safety authority in each jurisdiction in which the railway intends to operate before the train service commences.

8.3 INFRASTRUCTURE AND ROLLINGSTOCK RESTRICTIONS

8.3.1 Infrastructure restrictions, warnings and other important notices

Network owners should implement systems to manage restriction information, including the following:

(a) Permanent speed restrictions imposed (eg. due to track curvature, gradient or signal sighting).

(b) Temporary speed restrictions imposed (eg. due to infrastructure condition).

(c) Other warnings and restrictions (eg. loading, clearances, those to compensate for the effects of weather and other natural occurrences).

(d) Means of communicating the restrictions such as the following:

  (i) track side signs to identify speed restrictions;

  (ii) the regular issue of restriction information; and

  (iii) advice to train crews (through train control) of details of new restrictions that may be imposed between regular issues of restriction information by the network. This information should be provided as soon as practicable such as not to jeopardise safety, and detail whether trackside signs have been installed.

Train operators should implement systems to ensure train crews are issued with current restrictions, warnings and other important notices issued by network owners.

8.3.2 Rollingstock restrictions

****** To Be Determined ******

8.4 INCIDENTS AND NOTIFIABLE OCCURRENCES MONITORING AND REPORTING

Operations and safeworking incidents **shall** be reported in accordance with the requirements of the Interface Coordination Plan.

Each organisation should maintain contact details of the person(s) within their organisation responsible for receiving the information regarding incidents. These details should be provided to other organisations party to the Interface Coordination Plan.

Each organisation should determine if the incident is a notifiable occurrence and undertake the requirements of their organisation and legislation.
Each organisation should maintain their own records of incidents and corrective actions that are planned or implemented.

8.5 MAJOR EMERGENCY RESPONSE PLAN

The purpose of the Emergency Response Plan (hereafter in this Clause called the "ERPlan") is to provide direction to railway personnel in the coordination and mobilisation of resources in the event of a major emergency necessitating urgent medical or emergency aid.

The ERPlan **shall** remain in operation at the site of the major emergency until police or other command authority hand the site back to the railway organisation(s) and declare the area safe for recovery purposes.

The ERPlan should define the following:

(a) Geographic scope to which the ERPlan applies.

(b) ERPlan distribution list.

(c) Point of contact in the railway organisation(s) for general ERPlan inquiries.

(d) Identification of resources able to render assistance in the event of a major emergency.

(e) Procedures for emergency access to the infrastructure including site access to the track and special requirements in electrified areas.

(f) Communication requirements including the following:

  (i) contact details and communication protocols during the emergency for Emergency Services and key railway personnel;

  (ii) requirements for immediately informing the emergency services or controlling authority of the situation via a situation report ('SITREP') containing information in a format consistent with Emergency Services requirements;

  (iii) requirements for ongoing situation reports to be also provided to the emergency services controlling authority and railway organisation representatives identified in the ERPlan during the emergency;

  (iv) procedures for ensuring the maintenance of constant communication with, and at the emergency site and keeping the site informed of the progress of the emergency services response; and

  (v) requirements for informing the rail safety regulator.

(g) Responsibilities of railway workers during a major emergency including:

  (i) initial survey by on-site personnel of the scene of the major emergency with the aim of preventing further casualties from secondary effects. This will ordinarily take precedence over first aid and evacuation of the injured and should be carried out without creating danger to the personnel involved;

  (ii) initial response requirements of personnel following advice of a major emergency, be it from a railway worker, other authority, or member of the public;

  (iii) site control both prior to and following arrival of emergency services;

  (iv) the duty of workers to comply with the directions of the controlling emergency authority and provide every assistance possible in response to those directions; and

  (v) control of train and other movements impacted by or required to assist in the major emergency.

(h) Evacuation procedures for workers, passenger and the public.

(i) Dangerous goods requirements.

(j) Requirements for responding to media inquiries.

APPENDIX A: INTERFACE ISSUES

Interface issue	General requirements and interface management	Operations and safeworking	Rollingstock	Track, civil and electrical infrastructure
Vehicle configuration, axle load and speed		Configuration / axle load / speed route standards for the Defined Interstate Rail Network Operation of trains through worksites	Structural design of rollingstock Vehicle acceptance standards in empty and loaded conditions including ride performance, lateral and vertical loads (eg. impact of unsprung mass), and outline Load distribution and loading configurations for individual rollingstock classes Rollingstock condition restrictions (eg. wheel condition defects)	Track and civil structure design including consideration of dynamic loads conditions. Permissible speeds based on the geometric track layout (including maximum cant deficiency and excess) Track and civil infrastructure condition restrictions (eg. track geometry and sleeper defects) Management of events requiring special actions (including defined events at special locations) Worksites
Clearances between rollingstock and adjacent structures		Permissible rollingstock outline route standards for the Defined Interstate Rail Network Procedures for handling out of gauge rollingstock	Static and kinematic rollingstock outlines including loading dimensions	Procedures for determining and maintaining the structure outlines and track centres Structure outlines and track centres Operating clearances in electrified areas

Interface issue	General requirements and interface management	Operations and safeworking	Rollingstock	Track, civil and electrical infrastructure
Train Length/Mass		Train length and mass route standards for the Defined Interstate Rail Network including train crossing/passing location information and track curvature and gradient information Brake holding tests Operation of trains including braking, parking and lifting (eg. driving technique for long/heavy trains on grades) Path approvals for over length trains Procedures for handling over length or over mass trains	Train traction (acceleration) and braking (deceleration) performance, including traction systems such as sanding and creep control Rollingstock brake system design (train, independent, hand, dynamic/regenerative) Maximum longitudinal braking and tractive efforts applied by locomotives and trailing vehicles Determination of longitudinal train resistance forces for track grade and curvature Determination of lateral forces applied to the track by locomotives and trailing vehicles	Longitudinal track force limits (to avoid excessive longitudinal sleeper and/or rail movement and stresses) Lateral track force limits (taking into account temperature induced forces) Impact of tractive loads on rail stresses
Interaction of the Wheel and Rail			Wheelset back to back dimension Wheel geometry and profile Wear tolerances Wheel diameter	Track gauge and tolerances Rail profile and rail cant Wear tolerances Flangeway dimensions Check (guard) rail gauge for example in crossings

Interface issue	General requirements and interface management	Operations and safeworking	Rollingstock	Track, civil and electrical infrastructure
Marshalling rail vehicles		Train marshalling including length, mass, outline and dangerous goods requirements Train examination, testing and roll-by inspections Load securing procedures Locomotive haulage capacity Operation of grade control and load compensation equipment Compatibility of locomotives working together with respect to load sharing and wheel slippage Procedures for handling incorrectly marshalled trains	Trailing load limits for rollingstock Load securing and enclosure (eg. container) standards Rollingstock component condition standards (including brake system and wheelset and bogie condition) Design of grade control and load compensation equipment Design of locomotive traction and slip control systems Identification of date for required inspections	Trailing load limits and locomotive marshalling requirements for infrastructure reasons
Rail vehicle/Train class		Vehicle classes on trains Procedures for handling trains with vehicles of incorrect class	Vehicle classification	Definition of traffic classifications
Train failures, incidents and accidents	Major emergency response Accident and incident response	Procedures for handling a failed train Procedures for worker and passenger access/egress from trains under normal and emergency situations, including in electrified areas	Rollingstock couplings and lifting gear Access and egress design	

Interface issue	General requirements and interface management	Operations and safeworking	Rollingstock	Track, civil and electrical infrastructure
Communication of restrictions and notices to trains	Informing operators and drivers of restrictions and notices Requirements for infrastructure and rollingstock restrictions	Communications procedures for restrictions (permanent and temporary) and notices	Application of rollingstock restrictions	Application of infrastructure restrictions Operational signs and location
Communication of identification	Rail safety worker identification	Train, locomotive, vehicle (bogie type) and infrastructure identification Train documentation Time Standards		
Train interaction with train control		Communication route standards for the Defined Interstate Rail Network Train path planning, running times and availability Train control procedures and safeworking systems Communication equipment and procedures Traffic management principles Operation of track circuits	On-board communication equipment requirements	
Train interaction with workers		Safeworking for workers including communication equipment and procedures Worksite protection and train operating procedures	Driver awareness, vigilance and warning equipment	

Interface issue	General requirements and interface management	Operations and safeworking	Rollingstock	Track, civil and electrical infrastructure
Train interaction with signalling systems		Signalling route standards including principles, placement and description of indications and meanings Procedures for operation and maintenance of vehicles and other rollingstock whose location can not be reliably detected by the signalling system	Rollingstock (eg. electrical conductivity) design characteristics and maintenance	Track component design characteristics and maintenance (eg. fastening and joint insulation)
Train interaction with signs		Trackside sign route standards including current and future uniform sign usage Driver route knowledge See also "Communication of Restrictions and Notices to Trains" interface issue		Design of trackside signs, their placement and supporting structures Line of sight with signs
Workers interaction with electrical infrastructure	Safe-working Competencies	Safe-Working in electrified areas		Earthing bonding and switching design Warning sign and barrier requirements
Electrical compatibility of systems		Electrical and communications systems design, including protection from interference	Train electrical and communications systems design, including protection from interference	Electrical and communication systems design in electrified areas

Interface issue	General requirements and interface management	Operations and safeworking	Rollingstock	Track, civil and electrical infrastructure
Interface with other transport modes				Level and pedestrian crossings Grade separated crossings Access control and protection Utilities (Services) Shared facilities Terminals, yards and stations
Interface with the environment	Environmentally sensitive practices Environmental emergency response	Procedures for dangerous goods		Fire control and protection