Standards and Guidance Documents

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HIGHWAYS AGENCY

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Introduction to the Traffic Systems and Signing Registry

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Contents

1. INTRODUCTION

This document gives an introduction to the Highways Agency's Traffic Systems and Signing Registry (TSSR). It provides information on the documents contained in the TSSR, their application, coverage, intended use and how copies of documents can be obtained.

1.1. Purpose

The purpose of the Highways Agency (HA) publishing standards and specifications is to ensure equipment and services procured meet HA requirements and are compatible with existing HA systems

These standards and specifications are the mechanism used by the HA for specifying products and services for procurement, except for items of a "one off" nature which could be specified within the specific contract.

1.2. Scope

The TSSR documents have been prepared the HA specifically for use on the Strategic Road Network (SRN) in England. Some of these specifications and standards are used by the equivalent bodies in Scotland, Wales and Northern Ireland and also by local road authorities. However, the user shall consult with the appropriate body as to the applicability of a specific document, before use.

This range of technology specifications and standards relate to what is commonly described as "communications equipment", that is to say equipment which gathers and transmits information concerning the road network, its users and operation. This is a broader definition than telecommunications and includes additional devices such as vehicle detectors, climatic sensors and visual displays; it additionally encompasses the infrastructure which supports this equipment, including its physical supports and the services and processes required to install and maintain it.

These TSSR documents have been prepared for use by appropriately qualified professionals. Many matters are left to the professional expertise and judgement of users, whilst others are covered elsewhere in British or European standards, recognised industry codes of practice, guidance documents issued by trade associations and in specifications cross-referenced in the text.

The HA has also historically published through the TSSR, standards and specifications relating to Traffic Signals for use on all types of roads on behalf of the Department of Transport.

1.3. Legislation

The TSSR documents do not make reference to all legislation that may be applicable to works on the SRN. Anyone engaged in works on the SRN must comply with all applicable current legislation.

1.4. Mutual Recognition

Where there is a requirement in any document for compliance with any part of a "British Standard" or other technical specification, that requirement may be met by compliance with:

(a) a standard or code of practice of a national standards body or equivalent body of any EEA state or Turkey;
(b) any international standard recognised for use as a standard or code of practice by any EEA state or Turkey;
(c) a technical specification recognised for use as a standard by a public authority of any EEA state or Turkey; or
(d) a European Technical Assessment issued in accordance with the procedure set out in regulation (EU) No305/2011

provided that the relevant standard enables an equivalent level of performance and safety to be achieved to that provided for by the stated British Standard or technical specification.

"EEA State" means a state which is a contracting party to the European Economic Area Agreement.

"British Standard" means any standard published by the British Standards Institution including adopted European or other international standards.

1.5. Access to TSSR documents

Current TSSR documents may be downloaded from a central repository referred to as the TSSR Plans Registry (https://TSSRplansregistry.dft.gov.uk). Users are required to register before first use in order that they can be kept informed of changes to the service.

Alternatively documents may be requested by post, or email from:-

TSSR Plans Registry
Zone2/2/26H
Highways Agency
2 The Square
Temple Quay
Bristol
SB1 6HA

Email: TSSR_plans_registry@highways.gsi.gov.uk

Enquiries regarding TSSR documents should be directed to the same postal or email address.

1.6. Previous versions

This is the first version of TR1000.

2. USE OF TECHNOLOGY STANDARDS AND SPECIFICATIONS

2.1. Context

TSSR documents form part of a larger suite of documents published by the HA covering requirements for communications equipment for the Strategic Road Network (SRN) namely:

- The “Design Manual for Roads and Bridges” (DMRB) which assists designers with specifics levels of provision, and
- The “Manual of Contract Documents for Highway Works” (MCHW) which supports the contract compiler and constructor of the works by containing various documents including:
    - “Specification for Highway Works” and associated Notes for Guidance
    - “Highway Construction” Details.

The “Specification for Highway Works” combined with its contract specific appendices specifies what equipment shall be provided for a particular function and in the area of communications by reference to TSSR documents.

The TSSR documents give requirements for specifying and installing equipment in more detail than the DMRB or “MCHW”.

The requirements and advice contained in TSSR documents are given on the basis that any aspects of design or construction of HA assets that fall outside the scope of TSSR documents will be designed and constructed in accordance with the DMRB and MCHW.

2.2. Types of Standards and Specifications

TSSR documents fall into two broad categories:

- Documents used to procure equipment or services, including:
    - General equipment standards
    - Testing requirements
    - Documentation requirements
    - Equipment specifications
    - Interface specifications
    - Service delivery specifications

- Documents used to specify processes, including:
    - Installation procedures
    - Asset management procedures
    - Maintenance procedures
    - Financial appraisal

The TSSR Plans Registry is also holds various record documentation on existing installations and legacy documents.

2.3. Departures from requirements in TSSR documents

Departures from requirements given in TSSR documents may be appropriate in a variety of situations, including:

- where it can be justified that a requirement of a standard or specification is inappropriate in a particular situation
- where the application of a standard or specification would have unintended adverse consequences
- where innovative methods or materials are to be used
- where a document not in the suite of HA documents might be adopted if more appropriate in a particular situation
- where an “Aspect not covered by standards or specifications” is identified.

The responsibility for identifying circumstances where Departures may be appropriate rests with the service, works or product provider. A clear and adequate justification for not adopting the requirement must be submitted to the HA when seeking approval for each proposed departure.

Further information on the requirements for departures from standards and aspects not covered by standards may be found in DMRB documents GD01 “Introduction to the Design Manual for Roads and Bridges (DMRB)”

Safety aspects of departures from standards or aspects not covered by standards shall be assessed in accordance with GD 04 “Standard for Safety Risk Assessment on the Strategic Road Network”.

3. COVERAGE OF TSSR DOCUMENTS

3.1. General

TSSR documents are published by the Highways Agency in their role as operator of the Strategic Road Network (SRN) in England and are specified to suit the needs of that network.

TSSR documents relating to Traffic Signals are published by the Highways Agency on behalf of the Department for Transport for use on all roads.

3.2. Use by Other Highway Authorities

TSSR documents set a standard of good practice that has been developed principally for England's SRN. They may also be applicable in part to other roads with similar characteristics. When used for local road schemes, it is for the local highway authority (local roads authority in Scotland and Northern Ireland) to decide on the extent to which the documents are appropriate in any particular situation.

While the TSSR documents may be used by local highway/road authorities, such authorities should ensure that their application to local road schemes does not compromise health and safety, result in poor value for money, or have an unacceptable impact on the environment. It is recommended that any local authority making use of TSSR documents should establish formal procedures for considering their appropriateness.

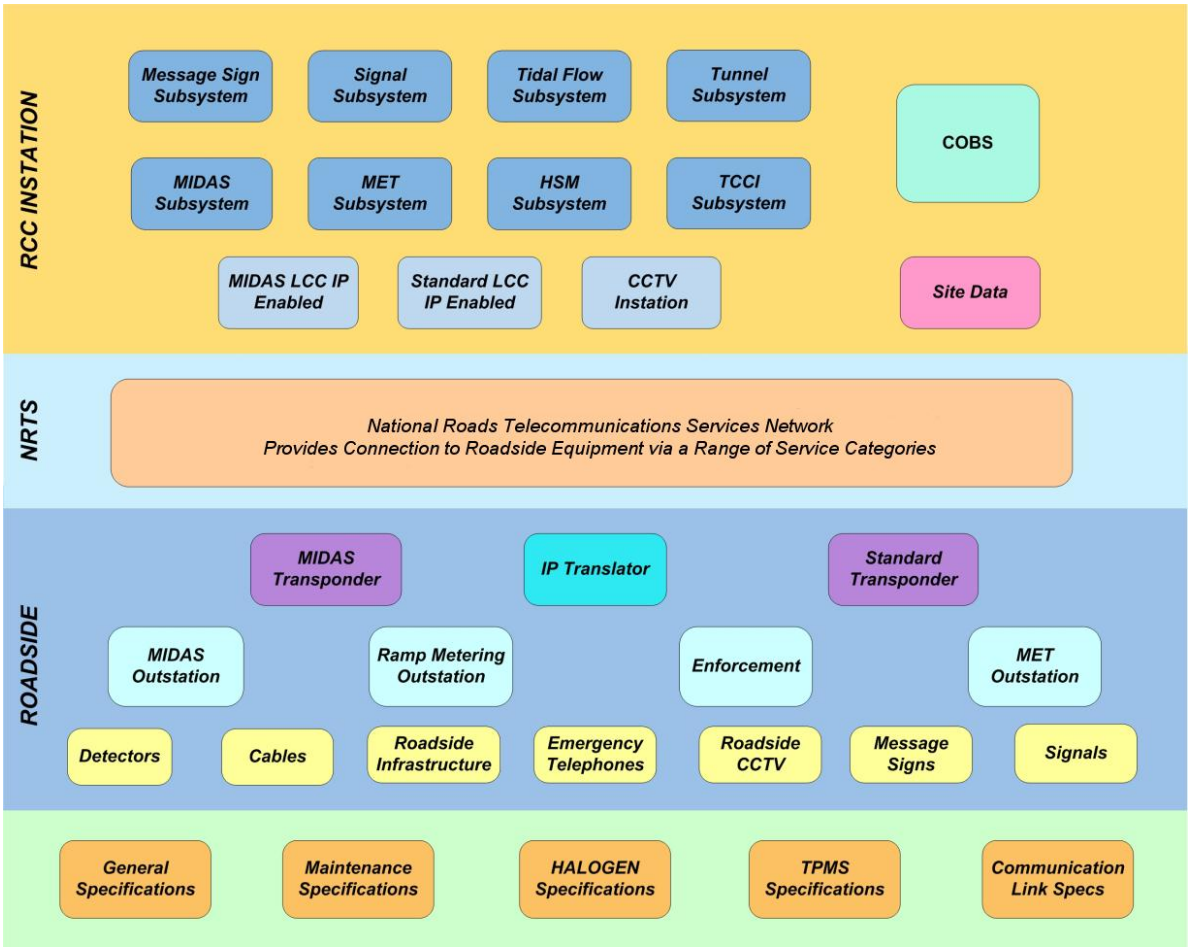
4. STRUCTURE OF TSS PLANS REGISTRY

4.1. General

Current TSSR Documents are published online through the TSS Plans Registry (see 1.6). This site has a graphical home page enabling documents to be located by equipment, service or document type, as illustrated below.

DMRB Volume 9 Network Traffic Control and Communications, Section 1 Technology Overview and General Requirements (TD71/11) provides an overview of the Technology used by the HA and provides an introduction for those not familiar with HA technology systems.

In general terms the HA has developed the National Motorway Control System (NMCS) over many years. This is a network of Regional Control Centres (RCC) which communicates with Roadside Equipment through the National Roads Telecommunications Services Network (NRTS), an IP data Network. At the roadside various communications systems are used including V24 and RS485, through “Transponders” which function in a similar way to network routers. The RCC Instations use a modular control system, the Control Office Base System (COBS), with specific sub-systems controlling functional groups of roadside equipment.



The TSSR site also provides a search facility for known document numbers and indexes of available current and legacy documents. The search facility uses the document number, document title or contents to locate a .pdf copy of a current or legacy document for download.

4.2. Classification of TSSR Documents

TSSR documents have a range of prefixes relating to their purpose. These cover a wider scope than standards and specifications, reflecting the role of the TSS Plans Registry as the library for documentation of the technology aspects of the SRN.

For information, prefixes used are as follows:

Prefix	Description	Currency
MCA	Drawing sequence used between 1968 and 1983 for site specific equipment details and general arrangements. Included are traffic signal details, display diagrams, mimics, loading schedules and telephone connections. Although some of these drawings may be extant they are not listed in the index. Enquiries to Plans Registry.	Legacy
MCB	Drawing sequence used between 1968 and 1983 for circuit diagrams of equipment. Included are equipment Types 11A, 42, 302, 304, 410A, 700, 3200, 3531, 3532, 7007 and DUET. Although some of these drawings may be extant they not listed in the index. Enquiries to Plans Registry.	Legacy
MCC	Drawing sequence used between 1968 and 1981 for equipment layouts. Included are layouts for signals and counting loops. Although some of these drawings may be extant they are not listed in the index. Enquiries to Plans Registry.	Legacy
MCD	Drawing sequence used between 1968 and 1981 for scheme maps and scheme schematic diagrams.	Legacy
MCE	Specifications for equipment. Also see "TR's"	Current + Legacy
MCF	Specifications for works. Subject areas include; installation and commissioning, maintenance requirements for a particular installation, and supply and delivery.	
MCG	Specifications for testing. Also see "TRG's".	Current + Legacy
MCH	Instructions. A general sequence for; handbooks, guides, instructions, request forms, procedures, reports and records. Also see "TRH's".	Current + Legacy
MCJ	Drawing sequence used up to 1989 for jigs, dies and moulding tools. Only three drawings issued .	Legacy
MCK	Amendment specifications. Sequence used to expedite into the public domain amendments to specifications pending full reissue of specification. Reserved for high priority amendments, such as safety.	Current + Legacy
MCL	Prefix reserved for drawings, specifications, records and maintenance manuals for lines and transmission systems.	Current + Legacy
MCS	Circulars dealing with the administration of technical documents. These are internal TSSR documents, except for MCS 206 and 212.	Current + Legacy
MCX	Drawing sequence used since February 1982 for equipment and other items that are not site specific. Examples are; standard installation drawings, cabinets, circuit diagrams and printed circuit boards.	Current + Legacy
MCY	Drawing sequence used since February 1982 for site specific as built records.	Legacy
MCZ	Drawing sequence used since February 1982 for drawing that do not fit into any other category, also includes bar charts, schedules, maps	Legacy
TR	Specifications for equipment.	Current + Legacy
TRG	Specifications for testing.	Current + Legacy
TRH	Instructions. Also see "MCH's".	Current + Legacy

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Note “Legacy” documents are entirely historic and the document is not longer used for the specification of new assets, but may be required for reference to existing assets. Current documents may be found on the TSS Plans Registry website. Legacy documents can be requested through the TSS Plans Registry website.

4.3 Specific Documents

Within the TSSR documents set, there are documents that are commended to all users, these form the general requirements for all equipment supplied for use on the SRN. In particular attention is drawn to:

TR1100 ”General Technical Requirements for Motorway Communications Equipment”.

5. Document control

The TSS Plans Registry system has been designed to ensure that publications can be used in a quality controlled environment. Overall document control is provided through the use of issue letters and date.

5.1. Additions and Amendment to the TSS Plans Registry

Procedures for development of new documents are set by the Intelligent Transport Systems Group.

5.2. Archive Copies

TSSR documents should be archived in accordance with the user's quality management system. Service providers shall maintain archive sets of contract documents specific to each contract, and shall maintain access to their own archive of TSSR documents appropriate to their contracts.

On a contract-specific basis this will form part of the contract record archive which shall include all necessary records including the contract specification and pre-construction drawings, as-built information, the Health & Safety File, quality records, goods and materials details and all other relevant information.

6. REFERENCES

6.1. Normative references

GD 04 “Standard for Safety Risk Assessment on the Strategic Road Network”

6.2. Informative references

DMRB	Design Manual for Roads and Bridges
GD 01	Introduction to the Design Manual for Roads and Bridges (DMRB)
MCHW	Manual of Contract Documents for Highway Works which includes the SHW and HCD
TR1100	General Specification for Motorway Signs, Signalling and Communications Equipment.

7. HISTORY

Issue	Date	Note	Author
A	July	First Published 2014	Nick Fairfax-Francklin
		Owner	Jennie Boyd

These regulations were notified in draft to the European Commission in accordance with Directive 98/34/EC, as amended by Directive 98/48/EC.

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