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Electrical and ITS Asset Drawing and Data Requirements Policy

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A	3 October 2017	Initial Issue	
B	4 December 2017	Update for Smart Freeways – INFORMATION DRAFT ONLY	
C	8 December 2017	Title update – “Electrical and ITS” added	cover
D	22 December 2017	Tom Peacock (student) update – sharepoint review	sharepoint sections
E	5 November 2018	Sharepoint and design reviews removed.	Sharepoint sections
F	16 November 2018	Standards Team Comments	Various
G	07 June 2022	General Update	Various

1 PURPOSE

This policy is to meet the intent defined within Main Roads' Quality Policy. This is achieved with specific emphasis on providing a quality transport network offering consistent performance as well as acting responsibly to address and manage quality issues with key stakeholders to drive quality and value for money, through the effective management of Electrical and Intelligent Transport Systems (ITS) Supplier Drawings, Data and Documentation.

The objective of this policy is to make clear the value of Suppliers providing Main Roads with drawings, data and documentation managed through the Asset Drawing and Data Requirements List (ADRL) to enable the delivery of world class Electrical and ITS infrastructure and outcomes to its customers.

Electrical Asset Management (EAM) is committed to ensuring the ADRL process is incorporated into the fabric of Main Roads Contracts requiring the supply and installation of Electrical and ITS equipment. The objective of integrating this electrical engineering industry standard method of managing Supplier Data, is to ensure Main Roads and its customers are delivered best-in-class equipment through effective and consistent governance.

2 SCOPE

This Policy outlines the broad purpose and objectives of EAM in respect of the ADRL and the Contract Drawing and Data List (CDDL) and the expectations of its inclusion into Contracts delivered by Main Roads.

3 ROLES & RESPONSIBILITIES

Role	Responsibility
MEAM	Owner of this Policy
PESE	Authorised to approve
SESE	Steward of this Policy

4 DEFINITIONS

Term	Definition
ADRL	Asset Data Requirements List
CDDL	Contract Drawing and Data List
EAM	Main Roads Electrical Asset Management
IOM	Installation, Operation and Maintenance Manuals
ITS	Intelligent Transport Systems
Main Roads	Main Roads Western Australia
MDR	Manufacturer Data Report
MEAM	Manager Electrical Asset Management
SESE	Senior Electrical Standards Engineer
Supplier	The party responsible for supplying goods and services, required under a Contract.
Principal Contractor (Principal)	The Principal, who has entered into a Contract managed by the Project Manager / Superintendent's Representative, on behalf of Main Roads Western Australia.
Project Manager	Persons accountable for the delivery of Electrical and Intelligent Transport Systems Infrastructure, which can be the Superintendent, Superintendent's Representative, Project Manager or Contract Manager.

5 SUPPLIER TECHNOLOGY DOCUMENTATION

5.1 Need

It is essential EAM has detailed Supplier Drawings, Data and Documentation, to enable the effective management of technological obsolescence, optimised Mean Time to Repair and considered long-term Asset Investment Planning. Effective use of the ADRL is to ensure Asset Owners and our Maintenance Contractors have fit-for-purpose documentation, to accommodate effective maintenance and operations of our Electrical and ITS Infrastructure, with a basis for future works.

Moreover, as projects have many Contracts to deliver a variety of interconnecting technology and infrastructure, it is essential the timing of the submission of Supplier Documentation is defined and managed to adhere to project schedules to avoid engineering conflicts. It is essential that issues are flagged at an early stage prior to manufacturing or early as practicable.

Electrical and ITS Infrastructure is evolving with the deployment of new technologies. With several Suppliers providing solutions utilising various hardware and firmware platforms, the capture of Supplier Drawings and Documentation in a repeatable and structured format is critical for installation and maintenance purposes. For example, the installation of communication mediums and power cables with their respective termination points on printed circuit boards, vendor supplied network switches and power terminals must be clearly detailed in the Supplier Documentation to enable safe, and efficient installation.

With the delivery of Smart Freeways and the essentialness of Ramp Signals and Lane Use Management infrastructure to enable the effective management of optimised traffic throughput, with near real-time reaction to traffic incidents, the need for a standardised management process of Electrical and ITS Supplier Data is one of critical importance. It is often that installation contractors and Electrical and ITS maintenance contractors are different, meaning there is a risk that upon handover of maintenance responsibility to the maintenance contractor, essential Drawing and Documentation are not readily available. The Asset Data Requirements Procedure will ensure all Supplier Documentation is easily accessible.

Furthermore, the importance of a defined staged approach of the submission of Supplier Data, enables projects to effectively manage Vendor packages across disciplines. A simple example to highlight this point is the interface of a Variable Message Sign and its Support Structure which needs to be compatible to avoid the need to modify hardware and fixing points at significant cost, after fabrication.

5.2 Asset Data Requirements List

Suppliers must provide documentation in accordance with the ADRL Template specific to the Main Roads Asset Type. This Industry Standard method of obtaining critical Supplier information is likely to achieve positive results for Main Roads. As such, it is the policy, in accordance with the requirements of the 700 Series Specifications that this process is incorporated into Main Roads existing Contract methodology.

Respective Main Roads 700 Series Specifications have a typical ADRL in their respective Annexures, and it is incumbent on each Contract to tailor the ADRL to suit Contract specifics and the broader project objectives.

The relevant Project Manager is ultimately responsible for the content of the ADRL, however EAM reserves the right to request documentation be completed and submitted after project completion or to refuse handover until the documentation is available.

The listed documentation requirements outlined in the ADRL Template represents the level of detail needed to ensure adequate Supplier Documentation review and compliance. The list is to detail Supplier Drawings and Documentation that is to make up the contents of the Installation, Operations and Maintenance Manuals (IOMs) and the Manufacturer Data Report (MDR).

The documentation included in the IOMs is to be individually reviewed at a time specified in of the ADRL. This staged process has the intention of identifying and resolving issues as early as possible in the design and fabrication process.

5.3 Contract Drawing and Data List

A CDDL is designed to be included with all procurement offers to the Principal Contractor. Dependent on specific Contract mechanisms, it is the expectation that the CDDL will initially be submitted as part of the Tender Response.

The CDDL is a complete list of Drawings and Documentation that is to be provided by the Supplier under the Contract. EAM may request the opportunity to review and comment on the contents of the CDDL and will be available to provide guidance to Project Managers, on behalf of the Principal Contractor.

5.4 Installation, Operations and Maintenance Manuals

5.4.1 General

One of the main objectives of the using the ADRL process is to ensure the timely delivery of fit-for-purpose IOMs. The IOMs must cover all aspects of the described function (i.e. Installation, Local Configurations or Maintenance) without reference to other sources of information outside the manual. To facilitate use by different groups within Main Roads, the manual must be divided as far as is practicable into Installation and Commissioning, Local Configurations and Operations and Maintenance sections, typically in three Volumes as per below.

5.4.2 Components of Equipment Manuals

Manual Type	Content
Volume 1 – Installation	Installation Instructions and Pre-commissioning Checks
Volume 2 – Local Configurations and Operations	Local Operator's Instructions/Guide and Commissioning Instructions
Volume 3 – Maintenance	Preventative and Breakdown Maintenance Instructions/Spares/Lubrication

5.4.3 Spare Parts Recommendations

The Project Manager must recommend spare parts, under the applicable ADRL code. The purpose of this is to be clear from an early stage the spare parts options and to provide this information as early as possible to the Principal Contractor.

5.5 Manufacturer Data Report

The MDR must be prepared to record all aspects of the Product's Manufacture. The MDR is to capture precisely what has been procured. In the event of technological obsolescence or future modifications, the MDR and contents will clearly define and capture important information pertaining to all equipment, bespoke or otherwise through datasheets, test records and fabrication records.

The MDR must be compiled and formatted to contain all the information and documentation requested and defined in the Contract/Purchase Order specific to the respective ADRL.

The Project Manager may use their own format provided that all information is included. Refer Electrical and ITS Asset Drawings and Data Requirements Procedure.

5.6 Document Cover Sheet

The Principal Contractor must provide document cover sheets, which must be utilised to provide the identification details, of all drawings and documents, to ensure uniformity and readability. Refer Electrical and ITS Asset Drawing and Data Requirements Procedure.

6 DOCUMENT REVIEW

Main Roads has a policy of reviewing, not approving, documents. Each document will be reviewed. Recommendations and the resulting contractual action is only be taken by the respective Project Manager.

It must be understood that nothing in the review status on a document, nor the approval or lack of approval shall discharge the Project Manager from any obligation or liability to complete the work in accordance with the Contract.

7 DESIGN AND CONSTRUCTION / ALLIANCE CONTRACTS

It is expected Design and Construction and Alliance Contracts use the ADRL and CDDL to manage Supplier Drawings, Data and Documentation. The same principles and benefits apply with the respect to Construct Only type Contracts.

It is recommended at an early stage of engagement with prospective Suppliers, a CDDL is submitted for review and this should be used to gauge the capacity for a Supplier to deliver a fit-for-purpose product to ensure delivery and design of best-in-class Electrical and ITS Infrastructure.

8 COMMISSIONING AND HANDOVER

The timely and accurate submission of the ADRL and CDDL and its contents, is essential to the Request to Commission Electrical and ITS Assets, irrespective of the Contract Type. Refer Electrical and ITS Standards Request to Commission Form. The purpose of a criteria at Commissioning is to ensure Maintenance Contractors have fit-for-purpose Supplier Drawings, Data and Documentation to meet the needs of our customers and enable the exceeding of Key Performance Indicator thresholds.

9 REFERENCES AND RELATED DOCUMENTS

Document Number	Description
D17#877844	Electrical and ITS Asset Drawing and Data Requirements Procedure
D17#744632	Handover of Electrical and ITS Assets Policy
D17#748571	Handover of Electrical and ITS Assets Procedure
D17#708814	Asset Data Requirements List - Template
D20#606854	Electrical and ITS Standards Request to Commission Form
D21#514601	Main Roads Quality Policy Statement May 2021