

ARTC Drawing Management System

EGP-04-02

Applicability

ARTC Network Wide

SMS

Publication Requirement

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4.0	17 Jan 22	Various	Significant re-write of procedure
4.1	11 Apr 24	2.4	NSW signal drawings reference added to Drawing Numbering section.

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1 Introduction

1.1 Purpose

This procedure provides guidance on the use of ARTC's Drawing Management System (DMS) for the storage, retrieval and management of engineering drawings, documentation and data.

1.2 Procedure Owner

The Configuration Manager is the Procedure Owner and is the initial point of contact for all queries relating to this procedure.

1.3 Definitions

The following terms and acronyms are used within this document:

Term or acronym	Description
ACONEX	The product name of the cloud-based software platform from Oracle that ARTC uses for its drawing management system. Known in this procedure as the ARTC DMS.
ARTC	Australian Rail Track Corporation Ltd.
CAD	Computer Aided Design
Drawing Management System (DMS)	A software package that stores and maintains access to drawings and documentation
Metadata	Information data fields entered for each drawing / document / data used for searching and identifying drawings / documents / data based on certain user defined search criteria (eg. location, drawing number, drawing type, etc).
Network Alteration Notice (NAN)	ARTC's configuration change management process as per procedure <i>EGP-03-01 Rail Network Configuration Management</i> .
Portable Document Format (PDF)	Standardized as ISO 32000, it's a file format developed by Adobe in 1992 to present documents, including text formatting and images, in a manner independent of application software, hardware, and operating systems.
Proprietary Drawings	Drawings owned by other organisations
Project Manager	The ARTC employee (or contractor) responsible for ensuring all aspects of a project or maintenance activity are fulfilled, prior to the close out of the project. The exact position title may vary between Corridors.
Public Transport Victoria (PTV)	For all ARTC infrastructure in the State of Victoria, drawings are required to be stored in the drawing management system managed by the Public Transport Victoria (PTV) on behalf of the Victorian Department of Transport (DoT).
RAMS	Rail Access Management System (RAMS) is used in ARTC to publish 'live' train operational data.
Repository	A repository is simply the different sub-locations where drawings may be stored within the Drawing Management System – it may also be thought of as a sub-directory / folder / project.

1.4 Reference Documents

The following documents support this procedure:

- EGP-03-01 Rail Network Configuration Management
- EGP-04-01 Engineering Drawings and Documentation
- EGP0401F-01 Drawing Alteration Request
- EGP0401F-02 Drawings for Submission
- EGP0401F-03 Maintenance Copies Drawings Transmittal
- EGP0401F-04 Design Interface Agreement Template
- EGP0401F-05 Request for Drawings & Signal Data
- EGP0401F-06 Signal Data Submission
- EGP-20-01 Project Management
- SDS 25 Signalling Circuit Design Standards

1.5 Responsibilities

Role	Responsibility
Configuration Manager	Responsible for the content and processes outlined in this procedure.
Project / Maintenance Representative	Responsible for ensuring that any new, updated, or decommissioned drawings from a project / maintenance activity are supplied by the contractor (or ARTC internally) in accordance with ARTC requirements and provided for storage in the DMS (ARTC or PTV) .
DMS Administrators	Responsible for the general functions of the DMS as per this procedure relating to their area of the network. This includes issue of drawings, upload of drawings, archiving drawings and general maintenance of files and metadata. Where applicable this could be for the ARTC DMS or the PTV DMS.
Configuration Management Administrator	Responsible for managing all administrative and configuration aspects of the ARTC DMS including the set-up and configuration of new users.

NOTE: Corridors are responsible for the management of drawings for the infrastructure they manage and maintain, including any delegation of responsibilities.

2 Overview

ARTC has a legislative requirement to store up-to-date drawings for all assets being maintained and managed within the ARTC network. The Drawing Management System (DMS) holds the drawings related to this ARTC infrastructure (e.g. signalling, track, civil, structures, etc).

Engineering drawings and related documentation / data are required to show how infrastructure has been designed, constructed and commissioned. They form part of the permanent record-keeping governance requirements as required by law under the lease agreements undertaken by ARTC.

Drawings at each of the different stages of infrastructure design, construction and maintenance are to be stored within the DMS :

- Issued-For-Construction / As-Designed
- As-Commissioned / As-Constructed
- As-Built / Works-As-Executed

Procedure *EGP-04-01 Engineering Drawings and Documentation* outlines the details for the format and requirements of drawings for storage in the DMS.

The ARTC DMS may also contain :

- Reference copies of drawings for other infrastructure contained within the rail corridor where applicable (e.g. underbores, third party infrastructure, etc).
- Signal data
- Engineering design documentation

The major functions of a drawing management system are:

- Storage of electronic drawings, diagrams, documents and data.
- Version Control
- Managing metadata information for each file
- Search capability using metadata information
- Security management (e.g. only designated DMS Administrators will be able to release master files for update)
- Managing the booking in / out of files.
- Requesting copies of files registered in the ARTC DMS
- Reporting capability, particularly with respect to reports of outstanding tasks

There are two different drawing management systems that ARTC utilises for managing it's infrastructure drawings – the ARTC DMS, and the Public Transport Victoria (PTV) DMS

2.1 ARTC Drawing Management System (DMS)

ARTC has selected a cloud-based software platform from Oracle known as “ACONEX” to use as it's Drawing Management System.

ACONEX is a construction project information and process management software package for managing processes, documents, drawings, building information models, communications, workflows, audit trails, and other project information online using both mobile and web access.

One of the reasons that ACONEX was selected was to provide ARTC's larger construction projects (eg Inland Rail, Major Construction Projects Division) the added functionality to assist them in their projects.

In terms of configuration management and addressing the legislative requirements on ARTC to maintain and store drawings / documentation on the infrastructure it maintains, ACONEX is the software chosen corporately for providing the Drawing Management System (DMS) function for ARTC.

This procedure outlines the use of ACONEX for the ARTC DMS and does not address the added potential functionality for major projects.

The term "ARTC DMS" will generally be used in this procedure rather than the software product name "ACONEX".

The ARTC DMS stores drawings and related documentation / data for all rail infrastructure in the States of NSW, QLD, SA and WA.

The ARTC DMS may be accessible to ARTC staff and other appropriately authorised users, however a *User Access Licence* must be granted prior to use, as per *Section 3.1 User Access Licences*.

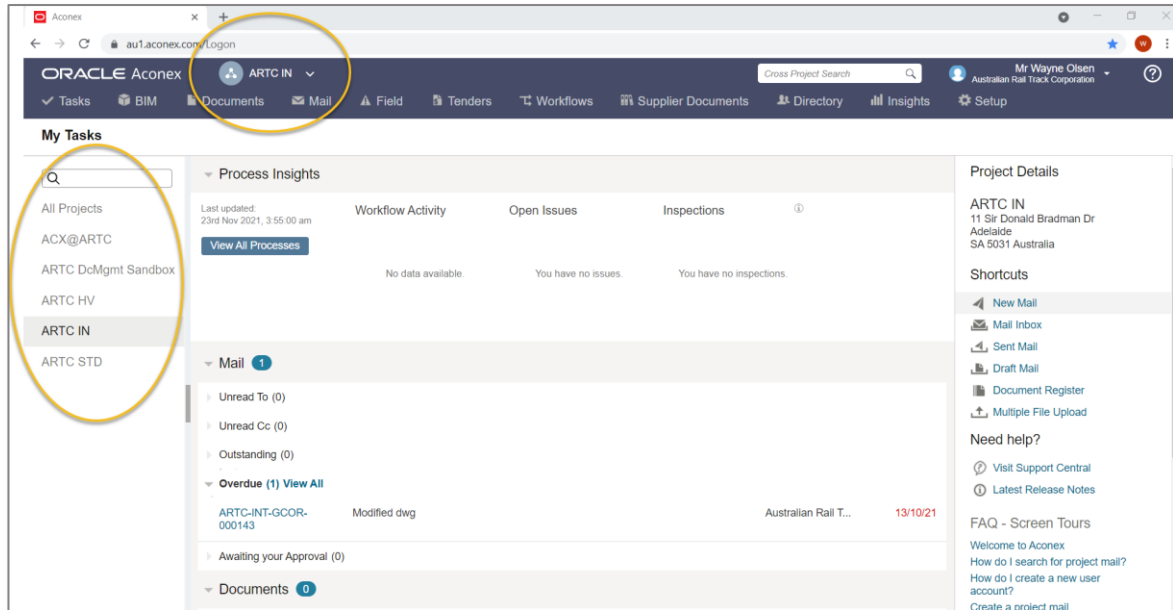
2.1.1 Business Unit Repositories

Drawings are generally separated and stored based in the ARTC Business Unit where the assets reside. The ARTC DMS has two Business Unit Repositories, plus a general Standard Drawing repository :

- **ARTC IN** – This is the repository for the *Interstate Business Unit* drawings.
- **ARTC HV** – This is the repository for the *Hunter Valley Business Unit* drawings.
- **ARTC STD** - This is the repository for *Standard* drawings that may be used repeatedly for common assets used across the whole of ARTC.

The repository required may be selected either from a dropdown box at the top of the screen, or on the side "My Task" window, as per below.

Note : Depending upon your User Access Licence configuration, you may have restricted access to only certain repositories.



2.1.2 Project Repositories

Large complex construction projects (eg. Inland Rail, Major Construction Projects Division) may decide to setup their own ARTC “Project” repositories setup in the ARTC DMS and resource their own DMS Administrator / Document Controller for their project. The project will fund the additional User Access Licences required.

They may also utilise the added functionality offered by ACONEX, however this is at the discretion of the project itself. It’s the responsibility of the project to configure, train staff, and implement the added functionality if they choose to use it.

Their project drawings and documents / data may be stored in this ARTC Project repository for the duration of the project to assist in working with designers, managing tender documentation, contractors, etc.

Depending upon the User Access Licence configuration, they may have restricted access to only certain functions / repositories.

At the completion of the project, or at certain key milestones, the drawings / documents / data are to be transmitted across to the relevant ARTC Business Unit repositories, and the ARTC Project repository archived.

2.2 Public Transport Victoria (PTV) Drawing Management System

For all ARTC infrastructure in the State of Victoria, drawings are required to be stored in the drawing management system managed by the Public Transport Victoria (PTV) on behalf of the Victorian Department of Transport (DoT).

This is a lease requirement placed upon ARTC and must be adhered to. Only As-Built drawings are permitted to be stored in the PTV DMS - any other drawing types / documents / data may be stored in the ARTC DMS.

This procedure only covers the ARTC DMS and does not cover the requirements for the PTV DMS, refer to EGP-04-01 Engineering Drawings and Documentation for further information on the PTV DMS.

2.3 Managing Drawings

2.3.1 DMS Administrator

A *DMS Administrator* should be assigned by each corridor to be responsible for managing the drawings / documents / data files for that corridor in the ARTC DMS. Access and training may be provided by the *Configuration Management Administrator*.

Contact the *Configuration Management Administrator* if you require information on who is the nominated DMS Administrator for your corridor.

2.3.2 Saving, Searching and Updating Files

Saving Files

Drawings / documents / data files are all stored and saved in the DMS by being “booked-in” to the system in the relevant repository within the DMS. Each file “booked-in” has metadata fields (information) associated with the file which describes the file and is used to enable searching and the management of the file in the future. The corridor *DMS Administrator* is responsible for booking-in files.

Searching for Files

The DMS has a search capability to enable the retrieving of drawings / documents / data files. It uses the information in the metadata fields to perform detailed and specific searches. The more detailed the metadata information, the easier it will be to find the files again.

Updating Files

Drawings / documents / data files are “booked-out” of the DMS to enable editing and updating of the master versions of the files. The corridor DMS Administrator is responsible for booking-out files.

2.3.3 File Formats

Drawing File Formats

The ARTC DMS generally stores drawings in two file formats. :

- *CAD* – The CAD version of the drawing file is the master file for the drawing and may be used for updating and editing. These files are booked in and out of the ARTC DMS by the corridor DMS Administrator. Access to these master CAD files for editing must be requested from the corridor DMS Administrator, as per *Section 4.3 Booking-Out and Updating Existing Master CAD Drawings*. Further information on the CAD file format requirements are specified in procedure *EGP-04-01 Engineering Drawings and Documentation*.

- *PDF* – The pdf version is a copy of the master CAD file. These files are booked into the ARTC DMS by the corridor DMS Administrator. They may however be searched and downloaded as reference copies by any user of the ARTC DMS. This pdf copy is read-only file and may not be edited in the ARTC DMS.

Note: Some historical drawings may be in different older file formats e.g. TIF

Document / Data File Formats

The ARTC DMS stores documents and data that may be stored in a range of different formats e.g. Microsoft Word / Excel, text file, pdf file, data file, etc.

Whilst this procedure primarily discusses instructions for drawings, it may be noted that documents and data are handled in much the same manner. Refer to the corridor DMS Administrator for further advice.

2.3.4 NAN Numbers / Project Numbers / Cost Codes

To monitor and keep track of drawings that have been booked-out to a project / maintenance representative, the DMS Administrator will require a code to identify the project or maintenance activity that the file has been booked-out for. This also applies for new drawings where new drawing numbers are requested.

The codes that will be accepted are:

- *Network Alteration Notice (NAN) Number* - as per *EGP-03-01 Rail Network Configuration Management*.
- *Project Code* – As per *ciFinancials* for Annual Works Plan (AWP) projects.
- *Cost Code* – As per *ciFinancials* for maintenance activities or incidents.

2.3.5 Historical Drawings

Older drawings contained in the ARTC DMS may have been inherited from previous rail infrastructure maintainers and owners.

Due to the age of many of these drawings and the lack of information provided at the time of their handover, their relevance to the current infrastructure in the ARTC network may be unknown. As a result, these drawings have been included in the ARTC DMS with the status of “*For Information*”.

Should relevant corridor personnel identify that any of these drawings are still current or indeed no longer current, then the status of these drawings may be amended accordingly in the ARTC DMS.

Details of the drawings concerned including drawing number and title and the new status required, such as As-Built or Superseded, are to be supplied to the relevant corridor DMS Administrator to enable the metadata to be updated.

2.4 Drawing Numbering

Drawings in the ARTC DMS use the following format and are issued by the corridor DMS Administrator:

ZZZ-X0001

Breakdown of Drawing Number:	
ZZZ	Location code from RAMS
X	Indicates the appropriate ARTC Discipline, as tabled below
0001	This is the sequential unique drawing identifier

Discipline	
S	Structures
C	Civil - Rail
E	Environmental & Studies
R	Rail Systems (signals, communications, wayside, electrical, ATMS)
T	Tunnels

Where drawings are required for infrastructure situated between designated RAMS locations, the location code of the RAMS location nearest to the infrastructure is to be used. If further guidance is required, then advice is to be sought from the corridor DMS Administrator.

Where drawings are required to cover the details relating to multiple locations, new drawing numbers will be issued in the following format:

YYY-ZZZ-X0001

Breakdown of Drawing Number:	
YYY	Location code from RAMS for start location of multiple location drawing
ZZZ	Location code from RAMS for end location of multiple location drawing
X	Indicates the appropriate ARTC Discipline, as tabled above
0001	This is the sequential unique drawing identifier

NSW / QLD signal drawings have their own drawing numbering format. Refer to EGP-04-01 Appendix C and signal standard SDS 25 Signalling Circuit Design Standards for further information.

2.5 Metadata

When drawings are submitted to the corridor DMS Administrator for booking-in to the ARTC DMS, the metadata information for the drawing must be provided and updated. This applies to both updated existing drawings, new drawings and documents / data files. The following metadata is to be supplied:

Metadata Field	Description						
File Name	The file name is a combination of the drawing number, revision and file format. E.g. drawing number ARTCN010596, revision A, in AutoCAD format would have a filename ARTCN010596A.dwg.						
Document Number	All new drawings will be numbered in accordance as per <i>Section 2.4 Drawing Numbering</i> of this procedure. Inherited generic drawings will retain their drawing number unless being updated. Drawings from other organisations held for reference would retain their original drawing number.						
Revision Date	The date a new design is ARTC Accepted; or the date As-Built drawings are updated; or the date certified commissioning copy was commissioned. For NSW / QLD signal drawings this is the date shown on the control sheet for the circuit book.						
Location	This contains the full geographic location name. For drawings covering multiple locations, each location may be referenced against the drawing as required.						
Line Segment	The ARTC line segment, as per in <i>APPENDIX A – Line Segments for Metadata Field</i> . If new Line Segments are required, contact the corridor DMS Administrator.						
Location in Km	This is the distance of the kilometre location as traditionally measured for the state/region and shown with 3 decimal places.						
File Category	<i>Master or Copy</i>						
Type	Denotes the type of document being stored. Most commonly this will be Drawing. Other available options include Checklist, Data Sheet, Plan, Report, Schedule and Work Package						
Status	<table> <tr> <th><u>Drawing Status</u></th><th><u>Description</u></th></tr> <tr> <td><i>For Construction</i></td><td>An ARTC Accepted design drawing Issued-For-Construction (IFC) as part of a project or maintenance activity</td></tr> <tr> <td><i>As Commissioned</i></td><td>A marked up IFC drawing containing changes identified during the project works or commissioning, which are to be edited to the</td></tr> </table>	<u>Drawing Status</u>	<u>Description</u>	<i>For Construction</i>	An ARTC Accepted design drawing Issued-For-Construction (IFC) as part of a project or maintenance activity	<i>As Commissioned</i>	A marked up IFC drawing containing changes identified during the project works or commissioning, which are to be edited to the
<u>Drawing Status</u>	<u>Description</u>						
<i>For Construction</i>	An ARTC Accepted design drawing Issued-For-Construction (IFC) as part of a project or maintenance activity						
<i>As Commissioned</i>	A marked up IFC drawing containing changes identified during the project works or commissioning, which are to be edited to the						

	<p>design drawing to form the As-Built drawing version.</p> <hr/> <p><i>As Built</i> The final drawing version from project or maintenance works that reflects the current configuration of the item in operational mode.</p> <hr/> <p><i>Not Started</i> Used to issue new drawing numbers when there are no existing records. Can also be used for design drawings which have been stored in the DMS from a project which has been placed on hold or cancelled.</p> <hr/> <p><i>For Information</i> Used for drawings which are the property of other organisations such as manufacturers and utilities. Also used for historic drawings where the current relevance of the drawing has not been determined.</p> <hr/> <p><i>Superseded</i> Used for drawings where the content is no longer relevant to the current infrastructure. e.g new or changed infrastructure now represented by a different updated drawing, or infrastructure that's been decommissioned from service without replacement.</p> <hr/> <p><i>Archived</i> Used for older drawings which are no longer suitable for use.</p> <hr/> <p><i>At Completion</i> Used where a drawing set is subject to multiple concurrent designs or frequent updates and enables each design version to be closed out in the ARTC DMS as the changes are incorporated into the As-Built file. This assists in identifying which designs are still outstanding in the ARTC DMS at any given time.</p>
Revision	Drawing version / revision as per procedure <i>EGP-04-01 Engineering Drawings and Documents</i>
Title	<p>This field contains the detail that would appear in the title block of a drawing such as:</p> <ul style="list-style-type: none"> • Muscle Creek Underbridge Renewal Pier Strengthening Concrete Details • Nammoona Loop Extension Track Alignment • Yongala 13P Location Power Supply Circuits
Sub Discipline	<p>This includes additional information to concentrate searches using a particular discipline.</p> <p>For structures drawings this could include Culvert, Bridge–Rail Over, Bridge–Road Over, Retaining Structures.</p> <p>For rail systems drawings this could include Circuit Book, Control Table, Detailed Site Survey, Drivers Diagram, Signal Plan, Track Insulation Plan, Communications Systems.</p>

	<p>For signalling data this could include CBI (computer based interlocking), LX Predictor (e.g. GCP grade crossing predictor), LX Monitor (e.g. Cerberus)</p> <p>For track and civil drawings this could include Alignment, Drainage, Road-Rail Crossing, Formation, Signage, Turnout, Public Utilities, Fencing, Access Roads.</p>
Discipline (Function)	Discipline
	<i>S</i> Structures
	<i>C</i> Civil - Rail
	<i>E</i> Environmental & Studies
	<i>R</i> Rail Systems (signals, communications, wayside, electrical, ATMS)
	<i>T</i> Tunnels
Authoring Organisation	Organisation responsible for originating the drawing.
ARTC Project ID	<p>Used for booking out drawings for update and as an additional reference for searching for drawings. This will be the Network Alteration Notice (NAN) number, Project Code, or Cost Code</p> <p>Project ID is not relevant for Standard Drawings as these are not specific to any one project.</p>
Additional Notes	<p><i>Optional Use</i> - Additional field for searching for specific subject.</p> <p>This may include details relating to an equipment approval, specific project information, related file details, or further information on other organisation's drawings included for reference purposes.</p>
Asset / Equipment ID	This is an equipment number derived from the Ellipse asset management system. It covers all physical assets installed on the network. The structures engineers use this as a reference for much of their information and it also applies to signals, electrical and track assets.

3 Accessing the ARTC DMS

3.1 User Access Licences

The ARTC DMS may be accessible to ARTC staff and other appropriately authorised external users, however a *User Access Licence* must be setup prior to use.

User Access Licences to the ARTC DMS are granted via an application to the ARTC *IT Service Desk Request* via ARTC CONNECT for access to *ARTC Systems and Software*.

User Access Licences are assigned to specific users using their email address.

ARTC DMS users fall into the following categories:

- *General Users* – This will be the majority of ARTC users where they may search, view and obtain pdf copies of files. They may also request transmittals of master files for updating.

Accessing the ARTC DMS

- *Guest Users* – This may be set up for contractors and third parties to receive requested transmittals of pdf copies of files, or CAD drawings for updating.
- *Corridor DMS Administrators* – This user may view and book in / out both pdf copies and master files. They're able to manage the files versions and metadata within the ARTC DMS system.
- *System Administrators* – This user has full system access to the ARTC DMS for configuring the system and for granting User Access Licences. The *Configuration Management Administrator* performs the role of System Administrator, however other users may also be granted this authority if approved by the Configuration Manager.

3.2 Logging into the ARTC DMS

The ARTC DMS, "ACONEX", may be logged into using ARTC's Single Sign-On. This only applies for ARTC employees and contractors with ARTC User accounts. Other external users will need to sign on with their Login Name and Password.

1. Navigate to the web page: <https://au1.aconex.com/Logon>
2. You will be greeted with the login screen. For ARTC users, select "Access Aconex via your Company's Network". For external users, enter your Login Name and Password.

ORACLE®
Aconex
Australia/New Zealand

Login Name

Password
 show

Log in

[Forgotten your Login Name / Password?](#)

[Access Aconex via your company's network](#)

Multiple Aconex Accounts? [Use Global Login](#)

3. Enter your email address and select "Continue"

4. You may be prompted for your credentials again by the browser. Enter your ARTC **username** and **password** that you use to log into your ARTC computer. If you're unsure of your username, please contact the ARTC IT Service Desk for assistance.

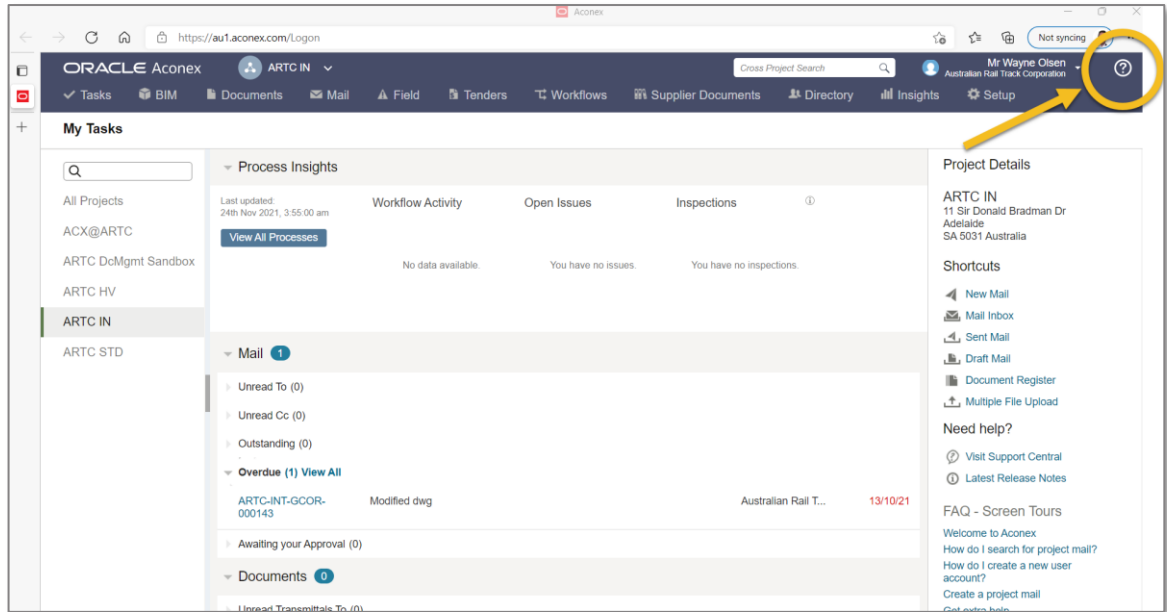
5. You should now be signed into Aconex. If you have any issues during this process, please raise an incident with the *ARTC IT Service Desk*.

3.3 Help and Training

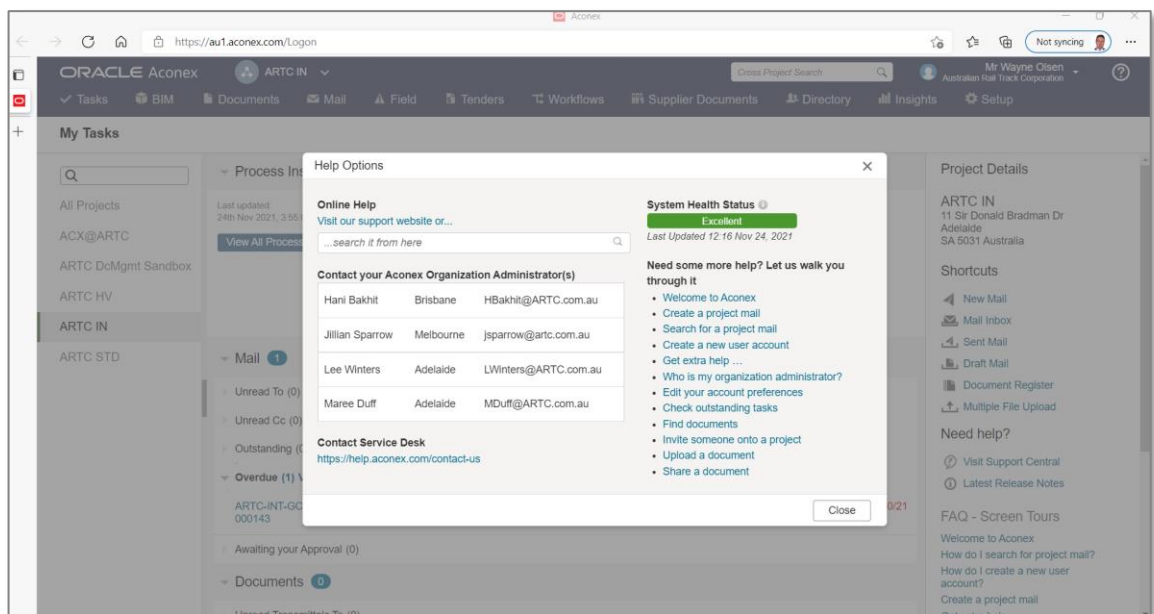
This procedure is not intended to be a full user guide for the use of ACONEX, it provides only the basics for managing drawings.

A basic user guide (ARTC Drawing Management System) is available on the ARTC CONNECT SharePoint site under "Our Network \ Standards & Procedures \ Network Configuration".

Full training, user guides, videos, and quick reference guides are provided by ACONEX via selecting the "?" on the main ACONEX home page, as per below.



You then have access to online help, training articles / videos, user guides.



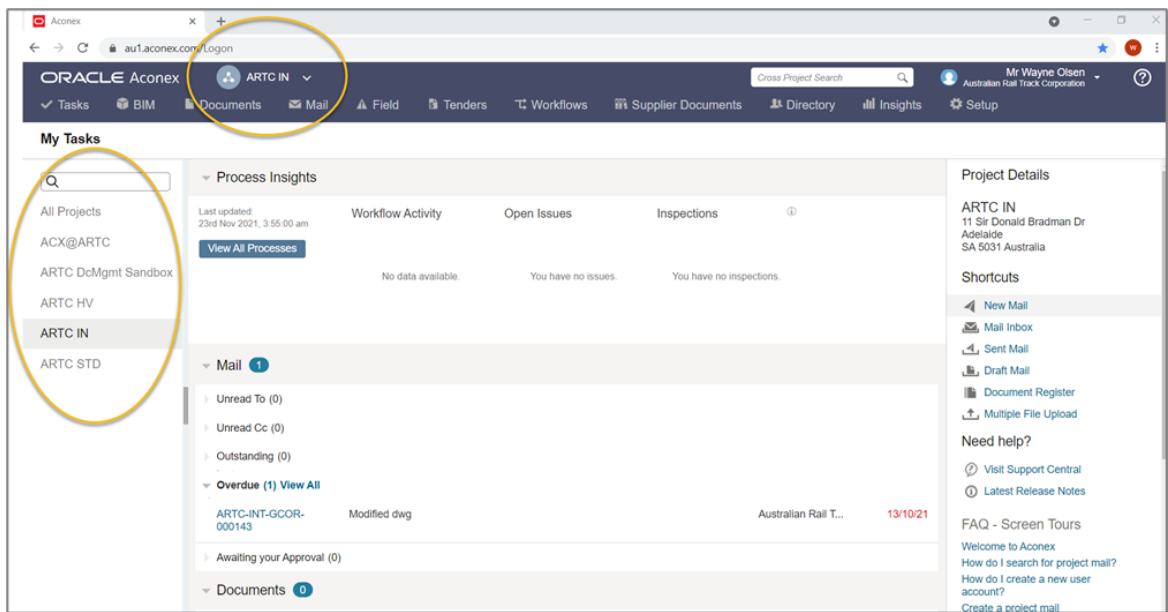
4 Existing Drawings

Note : The following section describes the process for drawings, however the same process also applies for documents and data files.

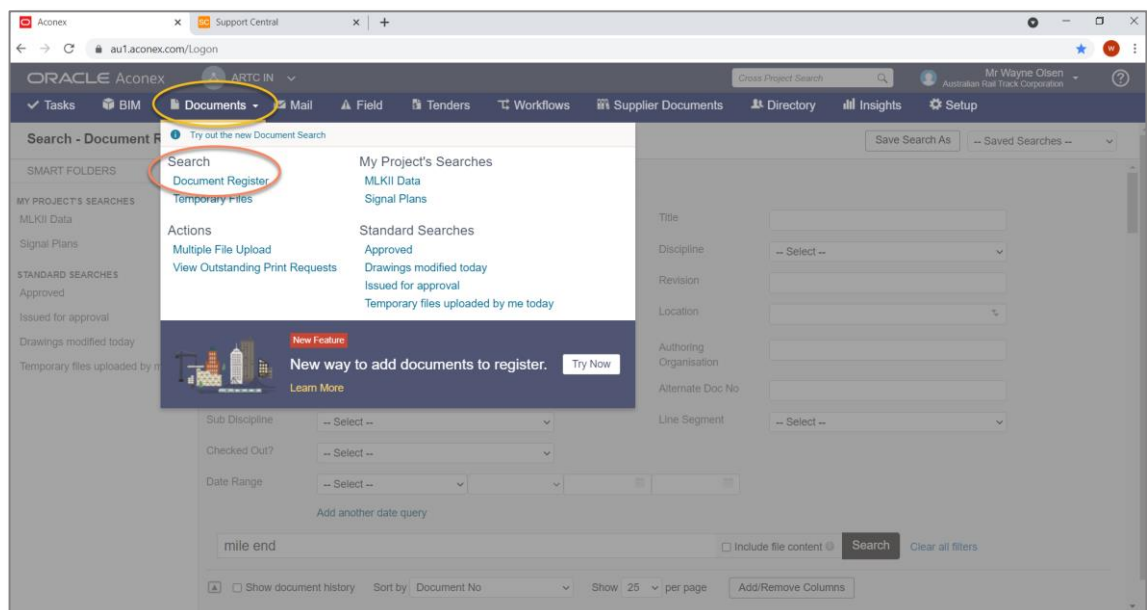
4.1 Searching for Existing Drawings

Drawings may be searched for by any User within the ARTC DMS. The files are searched using the metadata fields used to describe the drawing when it's uploaded into the ARTC DMS.

1. From the ACONEX home screen, select the repository where the drawing will reside. This may be selected either at the very top of the Menu Bar, or to the left-hand side window.



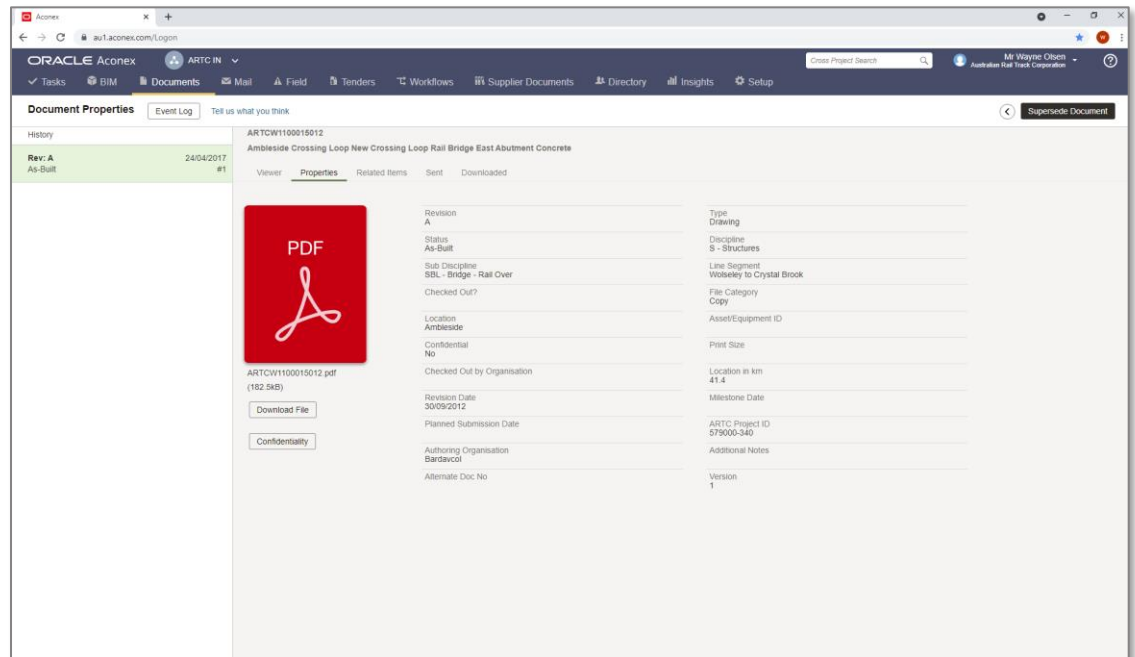
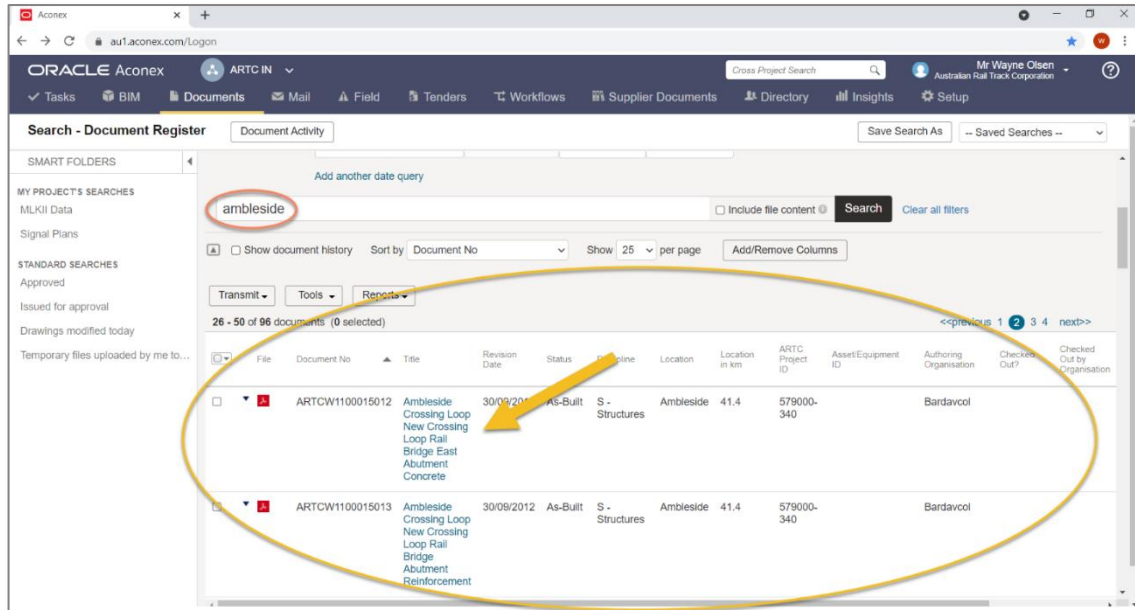
2. Once you've selected the appropriate repository, go to the top Menu Bar and select "Documents", and then "Document Register"



3. Enter the required metadata or keywords required for the search and click the “Search” button. This will show the latest version of all drawings / documents that match the search criteria.

Note : When searching, if you would like to also see all the historical files for the drawing, rather than just the latest version, tick the checkbox “Show Document History” before clicking the “Search” button.

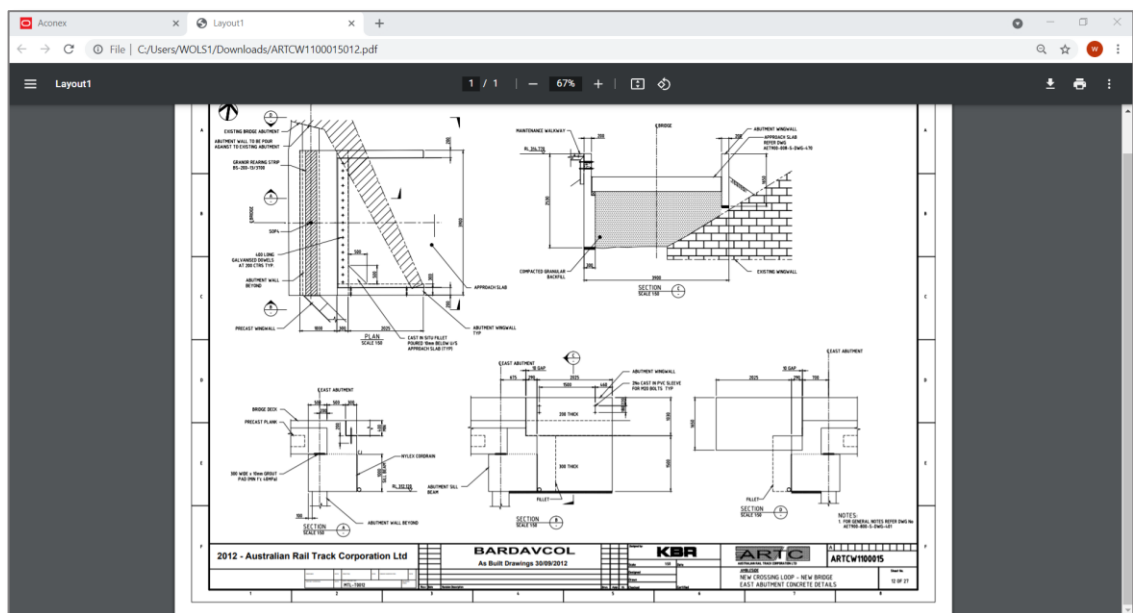
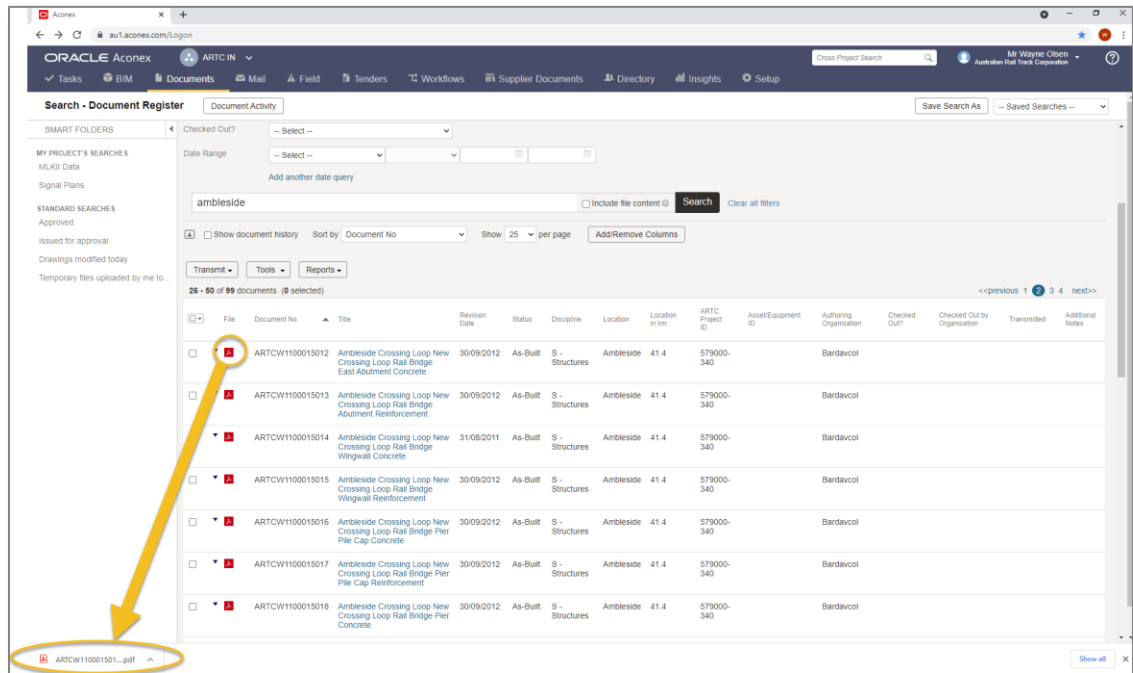
4. A list of relevant drawings / documents / data will be displayed, or a message if nothing matches your search criteria - “No search results found matching your search criteria”. Scroll down until the correct file is located. Click on the “Title” of the file for more details.



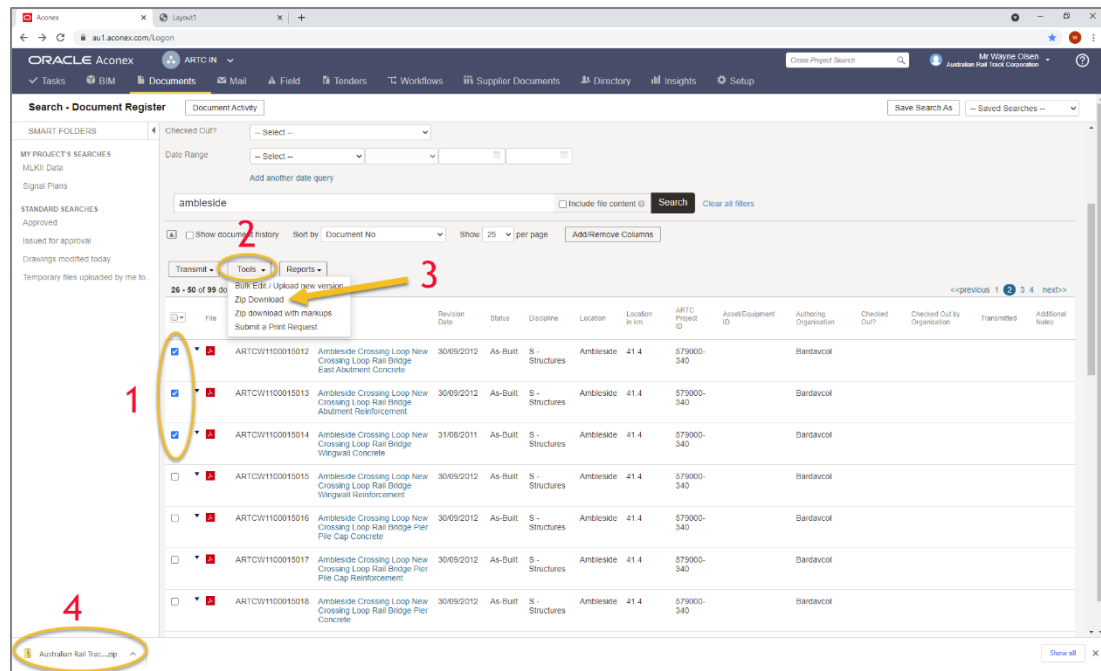
4.2 Viewing / Downloading PDF Copies of Existing Drawings

Once the correct drawing/s has been located via the search function, as per *Section 4.1 Searching for Existing Drawings*, a pdf copy of the drawing/s may be viewed or downloaded.

1. View the file by clicking the "File" icon. It will open in a separate window.



- Download the file/s by ticking the checkbox for the file/s required (1). Select "Tools" dropdown box (2), and then "Zip Download" menu item (3) and the pdf copy of the file/s will download ready for saving (4). For a single file selecting the icon will download the file to open. Zip download is used for multiple file download



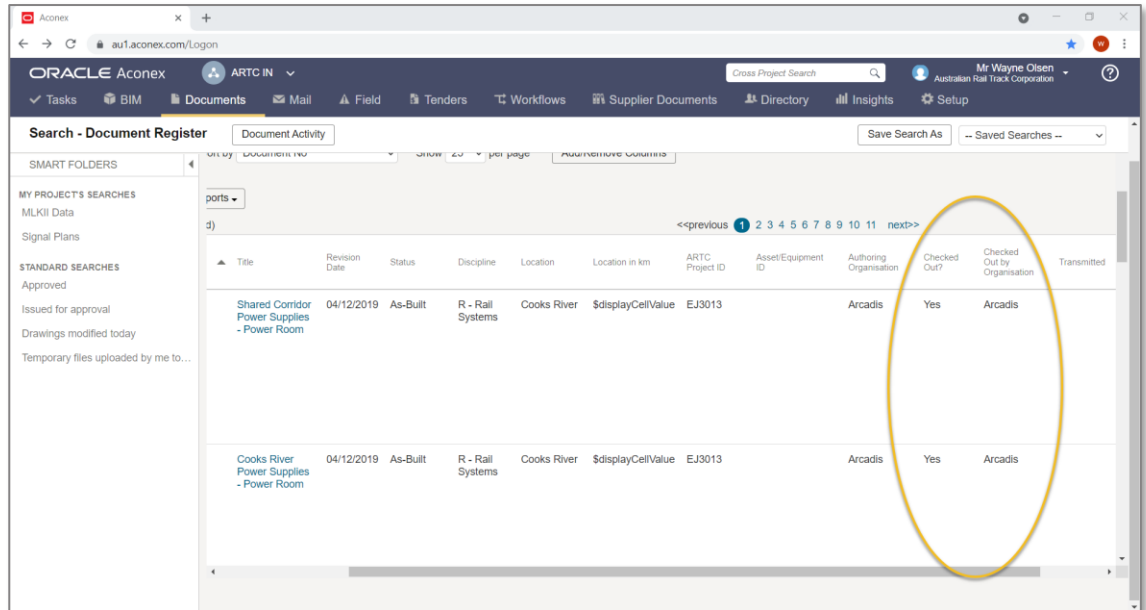
4.3 Booking-Out and Updating Existing Master CAD Drawings

Projects / maintenance may require existing drawings to be updated to reflect any changes made to the Network. In this event, the master CAD drawing file is to be requested for booking-out from the ARTC DMS by requesting the master CAD drawing file from the corridor DMS Administrator.

Once the CAD drawing is edited and updated by projects / maintenance, the updated master CAD drawing file, together with a pdf copy of the drawing and updated metadata, is returned to the corridor DMS Administrator for booking back into the ARTC DMS.

The following process steps are required for requesting and updating existing CAD drawings :

1. The project / maintenance representative identifies the CAD Drawing Title and Drawing Number required for updating.
2. The project / maintenance representative identifies in the ARTC DMS whether the drawing is already booked out to another project / maintenance team, as per the image below. Where drawings (and data) are required for multiple simultaneous projects, arrangements are to be made through the appropriate discipline engineer. A *Design Interface Agreement (EGP0401F-04)* may be used in this case, refer to *EGP-04-01 Engineering Drawings & Documentation* for more information.



3. To maintain monitoring and tracking of booked out drawings, the project / maintenance representative will be required to provide the corridor DMS Administrator either a :
 - *Network Alteration Notice (NAN)* - this is the NAN number used for configuration change management of ARTC's rail network as per procedure EGP-03-01 Rail Network Configuration Management.
 - *Project Number* – This is the ciFinancials project number used primarily for annual works plan (AWP) projects - capital (CAP) or major periodical maintenance (MPM).
 - *Cost Code* – This is the ciFinancials cost code used primarily for maintenance, reactive maintenance works (RCRM), or incidents.
4. The project / maintenance representative is to complete the form *EGP0401F-05 Request for Drawings & Signal Data*, and forward it to the corridor DMS Administrator.
5. Once the corridor DMS Administrator approves the drawing request, they'll book-out the drawing from the ARTC DMS and send a transmittal of the drawings and metadata sheet (also for updating upon booking back in) to the project / maintenance representative.

Note :

- a) The Transmittal will reference the Network Alteration Notice (NAN) / Project Number / Cost Code for the works being undertaken. This should be used in any follow up enquiries regarding the drawings. The relevant corridor discipline engineer will be copied in on the transmittal to ensure they're aware of pending changes to the drawings affecting their part of the network.
 - b) For requestors who are Users of the ARTC DMS, the transmittal and copy files will be accessible via the ARTC DMS system. Requestors who are not Users in the ARTC DMS will need to be provided with this information via an Outlook email, or file sharing programs such as ARTC data exchange platform / OneDrive.
6. The ARTC DMS will show the drawing as checked out in the metadata field for that particular drawing (*Checked Out ?*), and will display the organisation / person it's booked-out to (*Checked Out by Organisation?*).

4.4 Booking-In Updated Existing Master CAD Drawings

Once the booked-out master CAD drawing has been edited and updated to the next new version of the drawing, the master CAD drawing must be booked back into the ARTC DMS as the new master version of the drawing.

The following process is to be undertaken to book-in an updated version of the master CAD drawing back into the ARTC DMS :

1. The project / maintenance representative is to ensure that the drawings to be booked back into the ARTC DMS have been accepted by a competent ARTC discipline engineer, as defined in procedure *EGP-04-01 Engineering Drawings and Documents*.
2. The project / maintenance representative is to complete the form *EGP0401F-02 Drawings for Submission*.
3. The project / maintenance representative is to forward the *EGP0401F-02 Drawings for Submission* form to the corridor DMS Administrator (either via a transmittal in the ARTC DMS, or via email) together with :
 - a) The new master CAD drawings
 - b) A pdf copy of the drawings (with acceptance signatures)
 - c) The updated metadata sheets containing the relevant drawing information
 - d) A list of any superseded or redundant drawings
4. The corridor DMS Administrator will :
 - Book-in the updated drawings (CAD and pdf) into the ARTC DMS and update the metadata for the drawings.
 - Change the status of the metadata fields *Checked Out ?* and *Checked Out by Organisation* to show the drawings as being available for booking out again.
 - Supersede the previous version of the drawings, and it's metadata amended accordingly.

Note : For Signal Data – The form EGP0401F-06 Signal Data Submission shall be completed and forwarded together with the data files.

4.5 Standard Drawings

Requests to update Standard Drawings will require the completion of form *EGP0401F-01 Drawing Alteration Request*, specifying the changes required and reason for the change.

The form will be submitted for approval to the *Manager Technical Standards* and drawings will not be issued for update until the application is approved.

See procedure *EGP-04-01 Engineering Drawings and Documentation* for further information.

4.6 Archiving Redundant Existing Drawings

In some cases when drawings have been updated with new master CAD versions, the existing drawings in the ARTC DMS may not actually be superseded but may no longer be required as a result of the project or maintenance activity.

Details of these obsolete drawings will also need to be supplied with the updated files and metadata such that redundant files may be archived in the ARTC DMS system. These tasks are performed by the corridor DMS Administrator.

4.7 Cancelled or Deferred Projects

When a project is cancelled or deferred indefinitely, and the existing master CAD drawings has already been booked-out for update, the following will occur :

1. The project / maintenance representative that booked out the drawing must notify the DMS Administrator immediately in writing of the project cancellation or deferral.
2. The master CAD drawing in the ARTC DMS that was booked out for updating will remain as the most current version of the drawing and the “*Checked Out ?*” status will be changed to “No” in the ARTC DMS so that the current drawing in the ARTC DMS is once again available for future use by other projects / maintenance.
3. Any changes made to the booked-out drawing may be saved in the ARTC DMS with the status “*Not Started*” in the event the project resumes in the future and the work to date is not lost. Details relating to the project cancellation or deferment shall be included in the “*Additional Notes*” metadata field for future reference. The project number and further information relating to the cancellation / deferment should also be included in the relevant metadata fields.

4.8 Updating of Field Maintenance Drawing Copies

Following receipt of As-Built drawings from a defined project or maintenance activity, and where a hard copy of the drawings / documents is required to be forwarded from the ARTC DMS to be held onsite, the form *EGP0401F-03 Maintenance Copies Drawings Transmittal* will be used to confirm the receipt of these drawings / documents and destruction of any previous versions held at that onsite location.

The corridor DMS Administrator will complete the form with the details of the drawings / documents being supplied and forward all relevant files with the form *EGP0401F-03 Maintenance Copies Drawings Transmittal* to the required onsite location.

The relevant ARTC maintenance staff member will complete their details on this form to acknowledge that these actions have been performed and then return the form to the corridor DMS Administrator.

5 New Drawings

5.1 Requests for New Drawing Numbers

New drawing numbers will need to be issued when :

- Infrastructure works occur where drawings are not already in the ARTC DMS.
- Upgrades, changes or additions to the ARTC network require new additional drawings.

The project / maintenance representative emails the corridor DMS Administrator with the following information for a new drawing number request :

- a) NAN Number / Project number / Cost code
- b) Requestors contact details
- c) Number of drawings required
- d) Physical location of work / infrastructure (or RAMS location code)
- e) Type of work / drawings (eg. track, structures, signals, etc)

The corridor DMS Administrator will send a transmittal advice containing the new drawing numbers together with metadata sheets.

The RAMS location code will form part of the new drawing number issued from by the corridor DMS Administrator, as per *Section 2.4 Drawing Numbering*. A full list of location codes from RAMS is available from the corridor DMS Administrator.

5.2 Booking-In New Drawings

Once the new drawings have been created, they are to be submitted to the corridor DMS Administrator for booking-in to the ARTC DMS

1. The project / maintenance representative is to ensure that the drawings to be booked-in to the ARTC DMS have been accepted by a competent ARTC discipline engineer, as defined in procedure *EGP-04-01 Engineering Drawings and Documents*.
2. The project / maintenance representative is to complete the form *EGP0401F-02 Drawings for Submission*.
3. The project / maintenance representative is to forward the *EGP0401F-02 Drawings for Submission* form to the corridor DMS Administrator together with :
 - a) The new CAD drawings
 - b) A pdf copy of the drawings (with acceptance signatures)
 - c) The metadata sheets containing the relevant drawing information
 - d) A list of any superseded or redundant drawings

It may be forwarded either via a transmittal in the ARTC DMS, or via email.

Note :

1. For contractors not providing files via the ARTC DMS, drawing files may be submitted in a 'zip' file by email to the corridor DMS Administrator, or via a file sharing program and must include the following information:

- *Zip filename which includes project identifier and date of submission*
- *Email volume # of # (if applicable)*
- *EGP0401F-02 Drawings for Submission*

- *Drawing Number/Metadata Form*
- *Transmittal Notice.*

2. For Signal Data – The form EGP0401F-06 Signal Data Submission shall be completed and forwarded together with the data files.

5.3 New Drawings for NSW / QLD Signal Circuit Books

New Drawings for Existing Circuit Books - Where new drawings are required to be added to an existing NSW / QLD signal circuit book, new drawing numbers are to follow the requirements detailed in procedure *SDS 25 Signalling Circuit Design Standards*. In this instance new drawing numbers would not be requested through the corridor DMS Administrator.

New Circuit Books - Where a completely new signal circuit book is being created, the new drawing numbers will be required to comply with the ARTC DMS numbering, as per *Section 2.4 Drawing Numbering*, and the new drawings numbers are to be requested from the corridor DMS Administrator.

5.4 Older Drawings

Older drawings which have been drafted under previous administrations and procedures, and not compliant with *Section 2.4 Drawing Numbering*, will be entered into the ARTC DMS using the original drawing number.

Should these drawings require updating in the future and are currently in a non-editable format, they shall be updated into AutoCAD (or Microstation) using the standard ARTC template and be issued with a new ARTC DMS drawing number.

5.5 Proprietary / Manufacturing Drawings

These are drawings prepared by other organisations such as manufacturers and third parties (e.g. utilities). The intellectual property of these drawings belongs to the organisation that created them.

These drawings may be supplied to various clients of the organisation (including ARTC) and may be updated at any time. The content of the drawings may only be updated with the permission of the other organisation and the current status or version can only be verified by them.

These drawings are supplied to ARTC for reference purposes only and they are therefore normally supplied in non-editable format.

These drawings will be referenced in the ARTC DMS by their original drawing number and any other information relevant to ARTC that assists with finding them in the DMS such as location and project number.

Drawings used in the manufacture of equipment or standard infrastructure items, such as turnouts and culverts, are normally generated and maintained by the manufacturing organisation.

Should manufacturing drawings be created specifically for ARTC, they shall use the ARTC standard drawing template and ARTC DMS issued drawing number. They shall follow ARTC drawing requirements for *Standard Drawings* as detailed in *EGP-04-01 Engineering Drawings and Documentation*.

6 APPENDIX A – Line Segments for Metadata Field

Hunter Valley	Interstate
Islington Junction to Muswellbrook (I)	Telarah to Kempsey
Muswellbrook (X) to Werris Creek (I)	Kempsey (X) to Acacia Ridge
Werris Creek (X) to Boggabri (I)	Sydney to Albury
Boggabri (X) to North Star	Albury (X) to Craigieburn
Muswellbrook (X) to Gulgong (X)	Cootamundra West to Broken Hill
Gulgong (I) to Gap (I)	Broken Hill (X) to Crystal Brook (X)
Goobang Junction (X) to Dubbo	Melbourne to Wolseley (X)
Troy Junction to Merrygoen (X)	Wolseley to Crystal Brook
	Crystal Brook (X) to Tarcoola
	Tarcoola (X) to Kalgoorlie
	Unanderra to Moss Vale (X)
	Port Augusta (X) to Whyalla
	Craigieburn (X) to Melbourne
	Narrabri to North Star (X)
	Narromine to Narrabri (X)
	Parkes (X) to Narromine (X)

I = Inclusive

X = Exclusive