

Oracle Aconex Solution Overview

Oracle Construction and Engineering

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Purpose

This document provides an overview of the Oracle Aconex Cloud Service solution.

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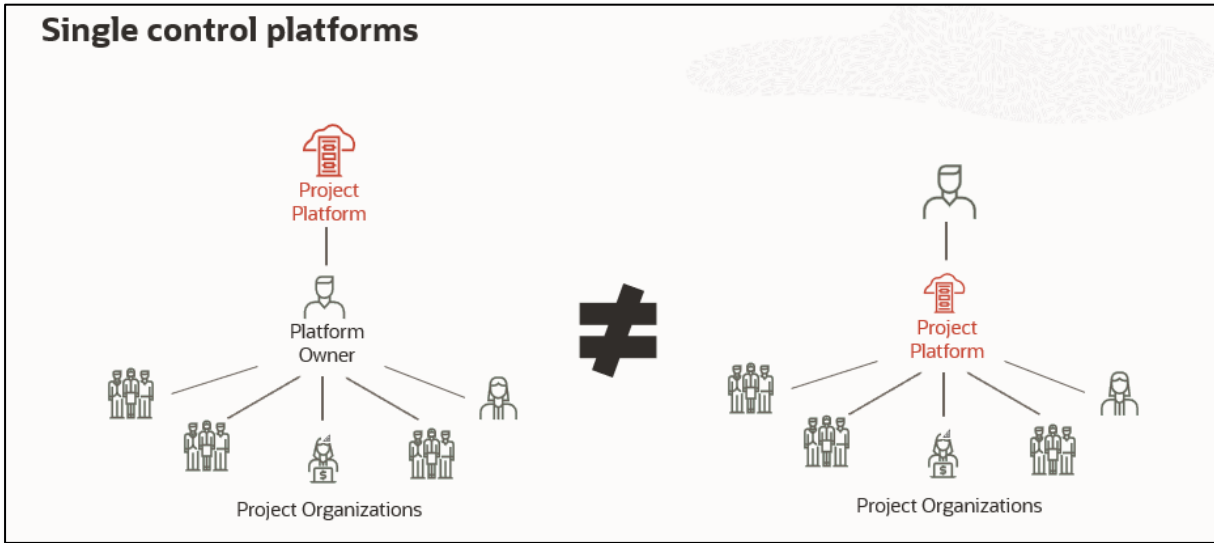
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Figure 1: Single control platforms.



Overview – What is Oracle Aconex?

Oracle Aconex (Aconex) is a fully featured Common Data Environment (CDE) delivered as cloud-based Software-as-a Service (SaaS). Oracle Aconex is a single central platform for the entire project team. The Oracle Aconex CDE provides inbuilt simplicity that makes it intuitive for users, is neutral so all project organisations are equal, with leading security. The cloud and collaborative model connects teams and processes across the entire supply chain. All on the one CDE. This provides control over across firewalls, across the entire supply chain and the entire project community.

Why Oracle Aconex?

Most platforms are single control - where one organization controls EVERYTHING. This may create an illusion of collaboration, but it's certainly not real.

When one organization is the gatekeeper, they effectively own and control all the project data, and access to that data. These systems fail at trust - how can you trust something that you're not sure you'll have access to tomorrow?

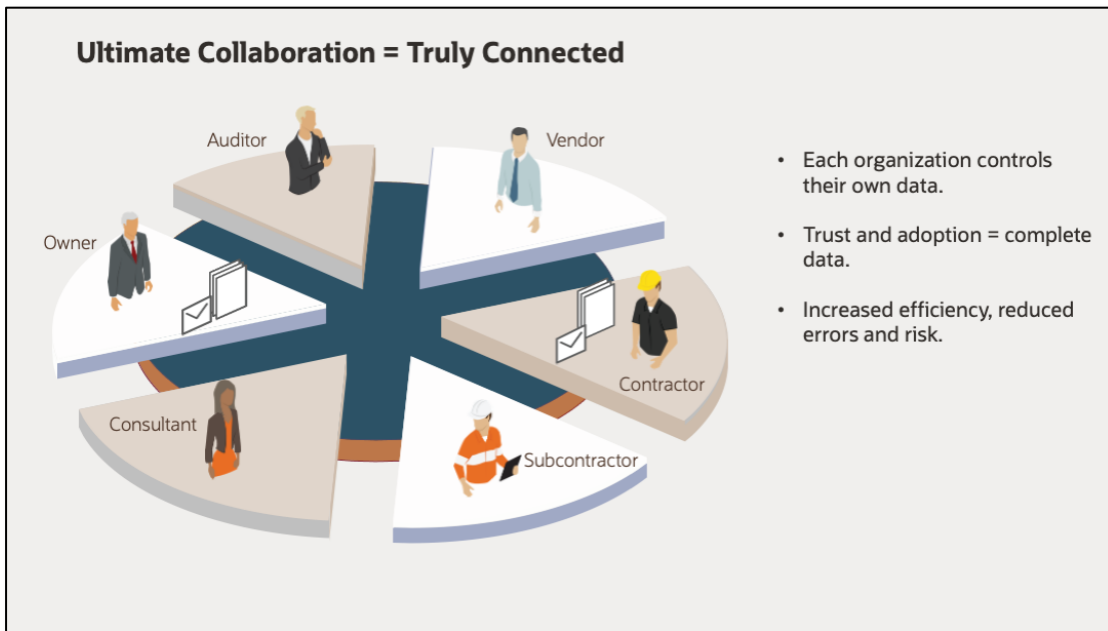
So, information fails to move freely. As project organizations don't trust the system, they prefer not to use it, so adoption across the project is poor. As a result, project organizations maintain their own separate systems and data stores to keep their own version of the truth, resulting in multiple, separate systems storing data, across many different organizations. Maintaining version control of information and ensuring everyone has the right information to do their job becomes almost impossible.

It also fails the platform owner / gatekeeper by providing them a false sense of data completeness.

In the end, collaboration suffers, resulting in mistakes, delays, and cost blowouts.

Ultimate Collaboration means truly connected teams. Where each organization controls and owns their data – they are in charge of what they share and when. This is the unique data ownership and sharing model that is the foundation of the Oracle Aconex platform. This model drives trust in the system by all the project organizations, and with trust comes adoption, project organizations will use the system, and this drives collaboration and data sharing. With all project participants using the one platform, a complete and accurate project record is captured on the one system - a single source of project truth.

Figure 2: Connected stakeholders through collaboration.



Secure Document Management

As any seasoned professional will attest, the industry is awash in documents and the volume continues to swell. Inability to effectively locate, securely share, and validate that all parties are working from the most current versions heightens risk in an industry that already has more than its share to manage.

Oracle Aconex can easily manage millions of documents and models without limits on data or participants, including any size, type, or number of files:

- Strict version control avoids errors by ensuring everyone is working off the latest documents
- Custom workflows automate review and approval cycles, reducing complexity, improving data capture, and increasing control.
- Workflow tracking and reporting provides real-time analysis to identify and action bottlenecks before they cause delays
- Work packaging makes it easier to track and control processes, from design and construction to sign-off and completion.

Process is Key

Process is paramount, and the value of document management extends far beyond the simple tasks of digitising, uploading, and storing what used to be paper documents. The best solutions enable effective document control processes while allowing teams easy access to reliable correct information.

Avoid the limitations of manual correspondence with a standardised digital process providing project wide access and visibility. From designing forms to creating fields, configure Oracle Aconex to your processes and capture the right data in the right format:

- Mail routing automates business processes, ensuring best practices and minimizing the chance of human error.
- Easily track process communications, keep up to date on progress, avoid bottlenecks, and reduce turnaround times for project management related processes, for example RFI's, by 50 percent.
- All correspondence is automatically logged and cannot be deleted, providing a complete project record and unalterable audit trail.

Oracle Aconex provides you with an unparalleled opportunity to achieve high levels of collaboration on your project increasing your ability to achieve overall success.

Managing Data

Simplify model coordination, connecting teams, models, and project data in a neutral and secure collaborative environment:

- Seamlessly share, review, and contribute to models without specialised design software
- Utilise a single platform to raise, communicate, and manage the coordination process with a dashboard to control and monitor progress
- The Oracle Aconex mobile app provides access to models and data onsite to improve communication and reduce the risk of errors and rework
- Built on open BIM standards for data interoperability
- As of today, Oracle Aconex is the only software vendor with ISO 19650 and DIN SPEC 91391 compliance

Gain visibility into budgets, forecasts, and projective outcomes to enable early corrective action:

- Track and report on any project level with unlimited work breakdown structure elements, control accounts, and work packages
- Use earned value methods such as cost-performance-index (CPI) and schedule-performance-index (SPI) to measure current project performance, and forecast your costs
- Keep budgets and schedule in sync using one-click integration with Oracle Primavera P6 Enterprise Project Portfolio Management and Oracle Primavera Cloud
- Track portfolio and project performance with real-time cost tracking and variance analysis.

Automate and standardise any inspection process with Oracle Aconex Field — which includes one mobile app for safety walks, quality inspections, punch lists, and more:

- Real time collaboration and control of jobsite processes. Track and share project information, with fast and easy access to the latest set of drawings, from anywhere on the jobsite.
- Tailor issue capture to your needs and capture the data that's most important to you, including defects, snags, and punch lists
- Keep using your existing forms exactly as they are and complete them in Oracle Aconex Field, eliminating paper inefficiencies
- Leverage real-time health and safety data to keep teams accountable and demonstrate compliance with regulatory requirements
- Minimise delays and risks by recognising red flags early with in-depth visual dashboards that provide insights at the portfolio, project, or organisational level.

No matter their location, participants and their project partners will be able to access the most up-to-date project drawings, files and information, reducing the risk of rework and inefficiencies due to out-of-date documents. As nothing can be deleted from the platform, an indelible record of project documentation and forms will provide a single source of truth and complete audit history from inception to handover and beyond.

Fairness

Most construction professionals, as well as project owners, agree that there is a direct and powerful correlation between the level of collaboration on a project and its overall success. Why, then, does true collaboration remain elusive in so many cases? The answer is trust. Many of today's collaboration platforms are not built to foster this essential ingredient. There can be pushback to having all parties on the same collaboration platform, which is often funded by the general contractor or project owner.

Oracle Aconex provides a neutral, universally fair platform - Everyone controls their own information and what they share. Oracle Aconex supports everyone on the project, each organisation has their own private, secure workspace and everyone has access to the best tools. An unalterable audit trail drives fewer disputes and faster resolution. This builds trust, driving adoption and collaboration, creating a single source of project truth.

A trusted and adopted platform, capturing complete process data across the lifecycle, maximises data quality, providing the visibility and control to better drive performance and improve processes.

- Private workspace
 - Each organization has its own private workspace that is configured into the system automatically and cannot be broken, i.e. no super-user who can see all information regardless of access rights
- Control own data and access
 - Each organisation owns and controls its own data in its own workspace and controls its own permissions and access for staff. All access rights are transparent to the publisher
- The audit history of actions and transmissions are fixed
 - Organisations do not have the ability to amend transmissions after the fact – new versions can be created to update files and documents
- Ability to communicate in private
 - All organisations have the ability to privately communicate via the collaboration platform
- No controlling administrator
 - There is no single controlling administrator across the whole system. No one is able to delete information, and no one can be shut out

In addition, organisations have unlimited use of the platform so they can privately involve other parties. All invited parties also get to access the full functionality of the collaboration platform to make their participation beneficial to them.

Finally, the platform provides security from external threats that is at least as good as any typical client would demand of their own systems. These factors build trust, and with trust comes adoption. With wide adoption, information flows. That is the lifeblood of true collaboration and the most successful projects.

Trust has been a perennial barrier to stakeholder adoption as the platform owner typically controls the environment and access to it. Neutrality is the answer, and Oracle Aconex is built upon this important principal.

Simplicity

Simplicity is a key ingredient of the Oracle Aconex platform. Let's put it this way; if the project team does not find the platform simple to use, they simply won't use it! Therefore, simplicity has also a strong correlation with adoption.

Oracle Aconex is a single application which provides a modular and intuitive web interface, which only displays the modules that a user is allowed to access. A mobile application is available on iOS and Android to enable users to access their data while they are on worksite, with all the constraints that it implies. The Oracle Aconex web interface and the mobile app are available in multiple languages, including Spanish.

Also, Oracle Aconex has implemented a modern metadata-based approach for documents, which is best suited to the volume of documentation generated in a construction project. As a consequence, searching and finding a document is extremely easy using the powerful Oracle Aconex search engine. Combined with the neutrality approach, this avoids any painful administration burden to building the right access to the various levels of a document folder hierarchy (no more tedious permissions per folder), removing any risk related to poor management of access rights. The administration of project users is also decentralised as every organisation is responsible for managing their own users, removing the dependency on one single organisation (the platform owner).








ORACLE







Last but not least, Oracle Aconex provides free of charge an online Support Central website which offers a range of self-paced training, video tutorials and online webinars (training toolkit), available to all participating organisations in a project (not only the paying organisation). All participating organisations can also contact the Oracle service desk (Oracle support) to get assistance if facing a technical issue.

Oracle Aconex Modules

Oracle Aconex cloud-based SaaS delivery model allows customers to reduce the costs and risks of technology systems. Oracle Aconex’s broad solution set, robust underlying technology, and mobile functionality helps organisations successfully deliver single projects or complex megaprojects and portfolios, both in the office and in the field.





Modules included in the Oracle Aconex Cloud Service

 Tasks	<p>Virtually any process can be managed within Oracle Aconex. Processes can be tracked on the Task Page of Oracle Aconex where all outstanding and overdue document approvals are shown. Notifications of overdue items can be automatically sent by the system in addition to proactive reporting to expedite reviews and move documents through workflow reviews and submittal management.</p>
 Documents	<p>The Documents Module has a private register for each organisation or department within a project, which can support any file type and store revisions of every document uploaded onto the system. Oracle Aconex is a fully configurable platform that provides the project team with the flexibility to manage projects of any size and complexity, allowing users to register, search for and retrieve their project information (Documents, Correspondence, Packages, Workflows etc...) using various metadata fields.</p>
 Workflows	<p>The Oracle Aconex workflows module can automate repetitive functions, accelerate turnaround, and reduce administrative delay in approval cycles. Improved visibility helps identify process bottlenecks and managers can view a complete audit trail and monitor progress across multiple workflows in real time.</p>
 Packages	<p>Oracle Aconex provides a way to create Packages that depicts an area of Design, Construction or Completion Works for Handover to Asset Owner. The Package Module allows for each of the different Package types to have their own unique configurable metadata fields to ensure capture of information appropriate to the Package and process.</p> <p>A Package is managed both internally and externally to allow for cross-organisation collaboration to gather the required documentation and/or Mail forms to complete the Package. Packages in their entirety can be work flowed for review, commenting and approval. The Package revision and version is controlled as is the distribution and control of updates through administrators and editors.</p> <p>The Package Register is automatically updated with metadata changes and distribution details. The recipients of the Package can export the content to a folder structure as required at handover.</p>
 Supplier Documents	<p>The Supplier Documents module automates and manages the large volume of vendor data generated on complex projects. It provides an efficient way to define the scope of each submittal package, visualise the progress of multiple packages of information by automating the calculation of due dates and statuses, regulate the submission of documentation and increase the speed of approvals and processing.</p> <p>Through the Supplier Documents module, packages can also be compiled for ease of distribution.</p>
 Models	<p>Models is a dedicated space for collaborative model management in Oracle Aconex. With Models, you can:</p> <ul style="list-style-type: none"> • Share models with everyone on your project. • View and navigate model files in an aggregated view, without using proprietary model authoring tools. <p>While Models isn’t a replacement for proprietary authoring tools, it allows your project team members to access published models without 3D design software: all they need is Oracle Aconex.</p>
 Mail	<p>Oracle Oracle Aconex Mail serves as a project mailroom for creating, delivering, recording and archiving all project correspondence (with or without attachments).</p>

	<p>Mail forms can be configured to each organisation’s own templates, maintaining corporate identity. Correspondence is also automatically logged, cannot be deleted by any project participant once sent, and can be retrieved using attributes, wildcards, and free text.</p>
 <p>Oracle Aconex for Outlook</p>	<p>Outlook plug in that lets users manage their Oracle Aconex mail from within Outlook and import emails from Outlook into Oracle Aconex. Access to the project mail and document registers allows users to send project instructions, respond to RFI’s, and access and forward project documentation from within Outlook. Contribution of traditional ‘non-user’ to the project record maintains all the information needed for a comprehensive audit trail.</p>
 <p>Field</p>	<p>Oracle Aconex Field is a cloud-based issue management and checklist solution that transforms the site inspection process. It captures, distributes and tracks quality, safety and other inspection data in real time.</p> <p>Oracle Aconex Field makes it easier to resolve defects on large, complex projects. It is an easy-to-use mobile application that transforms site inspections and issues management. Subcontractors and other participants are able to access the system for an always up-to-date view of issues they’re responsible for, and to notify when works are ready to inspect. Invite other organisations to use Oracle Aconex Field to conduct their own site inspections.</p>
 <p>Tenders/Bids</p>	<p>The Tenders module confidentially manages the bid process electronically, including tender package distribution, addenda, requests for information and clarifications. Issuers can invite bidders to their secured bid space whether the bidders are Oracle Aconex users or non-Oracle Aconex users and the locked-box option ensures process probity is observed.</p>
 <p>Contract Management</p>	<p>The contract management features in the Cost module are available for all organisations and allow you to track your commitments (downstream sub-contracts) and revenue (from upstream contracts). You can use the collaborative contract change and payment processes to speed up and keep more accurate records.</p>
 <p>Insights</p>	<p>The Oracle Aconex Insights module includes:</p> <ul style="list-style-type: none"> • ‘Dashboards’ which provides diagnostic, graphical dashboards that allows users to monitor cross-project progress at a glance. Key mail processes are easily configured to organisational standards to provide intuitive and actionable data visualisations that will assist users to manage risk, monitor quality and keep the project on track. With simple click through capability, users can go from the cross-project level dashboard into line level details for further analysis. • ‘Reports’ which lets you set up, run and export preconfigured and customizable reports on many of the common processes in Oracle Aconex. Standard reports cover everyday processes to suit most users. Need flexibility? Create custom reports in three easy steps: Define, Design, and Share. <p>Organization Reports provides information on organization details including user details, activity, and user role assignment. They contain information from all projects your organization is involved in. You can download them from any project that you have access to, and see the same information.</p>
 <p>Oracle Aconex Mobile</p>	<p>Oracle Aconex for Mobile brings key Oracle Aconex functions to mobile phones and tablets. It’s a free app that’s available for iPhone, iPad, and Android phones and tablets.</p> <p>Oracle Aconex Mobile solutions enable users to create and access their project information via their mobile devices all via secure HTTPS connection, letting them work away from their desk or in the field. Importantly, it also offers a range of features that are only possible with a mobile device, such as capturing information on site and notifying others instantly (issues, taking pictures, etc.)</p> <p>Oracle Aconex for Mobile gives the entire project community the flexibility of working on the go either online or offline without an internet connection:</p> <ul style="list-style-type: none"> • View documents and mail • Respond to mail • Create mail and save it to drafts and send when back online

	<ul style="list-style-type: none"> • Access mail and documents that you've recently searched, so long as you have caching turned on.
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Optional Modules

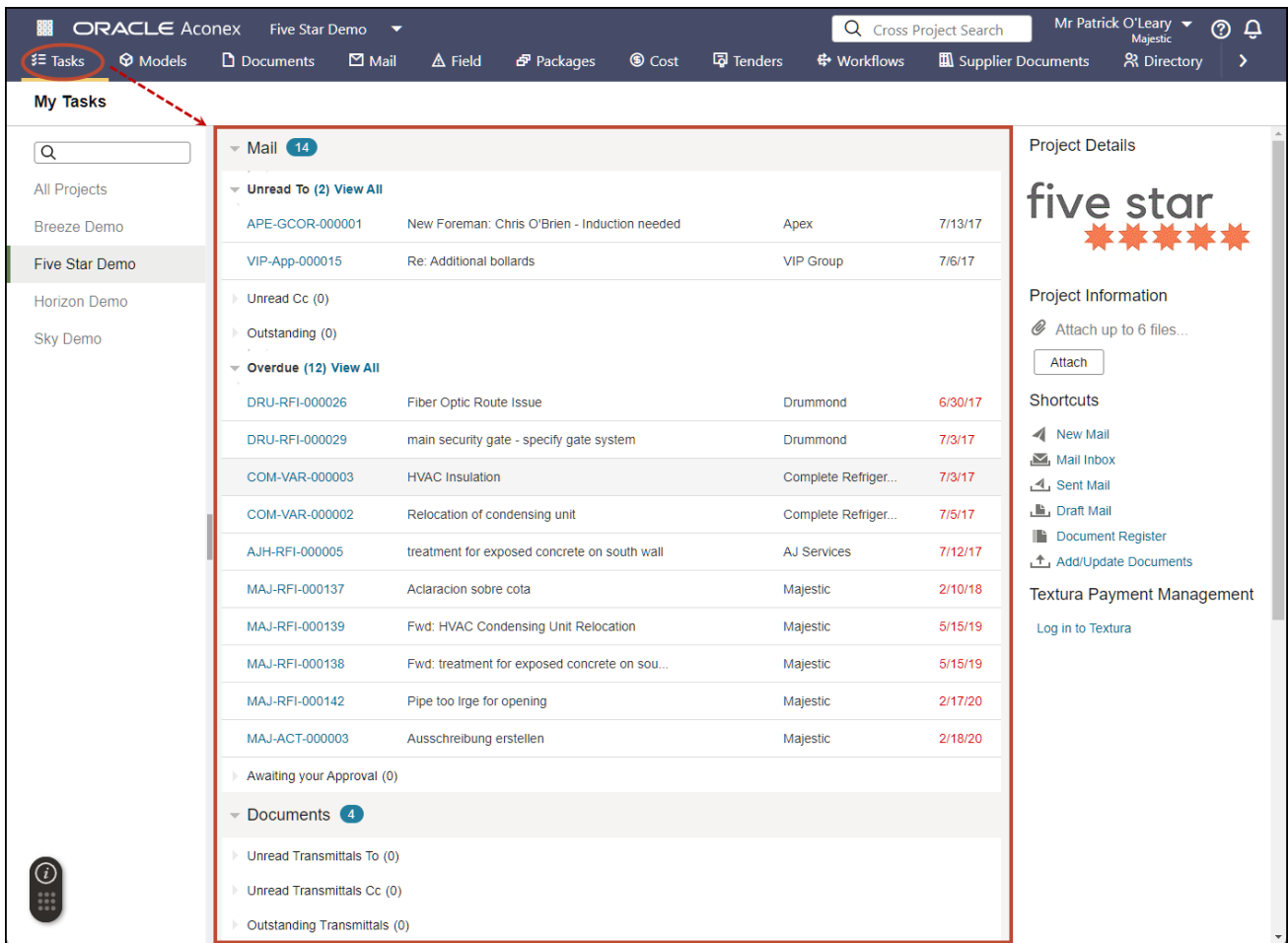
 Cost	<p>Oracle Aconex Cost is a flexible and highly customizable cost management solution. It combines cost, schedule, contracts, and other vital data to bring greater accuracy and clarity to the progress and performance of your projects. Use industry standard ways to measure progress, calculate forecasts, and report on your projects financial status.</p>
 Model Coordination	<p>In addition to the Models functionality provided in the Oracle Aconex Cloud Service, Model Coordination allows users to do the following:</p> <ul style="list-style-type: none"> • Comprehensive issue and clash management supporting the end-to-end coordination process. • Seamless design issue capture, management, and resolution. • Built-in clash detection automates the identification of clashes, improving the quality and efficiency of models: • Interrogate and visualize clashes in the online viewer. • Plug-in integrations to authoring and model checking tools. • Dashboard to monitor progress and reporting. • Create and share viewpoints. • Measure in the model and communicate results. • Integrated process support and full audit trail across the supply chain. • Correspondence around models can also be managed using Issues. An informal alternative to official project correspondence, issues are often used within the design team to manage coordination processes like clash detection.
 Handover (Smart Manuals)	<p>The Oracle Aconex platform provides a full Operations & Maintenance technical data solution starting from defining and assigning requirements, collating, reviewing and approving the documentation, generating the manual export and even delivering it to the client. The exported "Oracle Aconex Smart Manuals" runs on PC and provides:</p> <ul style="list-style-type: none"> • access via Folder Structure; or • via comprehensive Graphical Interface; or <p>Search Engine capability.</p>
 On Demand, Scheduled & Online Archives	<p>Oracle Aconex Archives provide you with an accurate and searchable copy of all your correspondence and documents, including their metadata. An archive can be created at any stage of the asset lifecycle, at regular intervals or at completion, depending on your needs. There are three ways to work with Oracle Aconex Archive</p> <ul style="list-style-type: none"> • Online Archive • Scheduled archive • Project Archive <p>Organisations can procure Archives for their data only because each organisation retains right, title and interest in and to their client data. Ownership of client data is not transferred to Oracle Aconex or any other organisation at any time.</p>

Task Management

Virtually any process can be managed within Oracle Aconex. Whether they are document-based processes (such as a document review) or any other formal project correspondence (for example a request for information or a change request), a process will generate a task (or a series of tasks) for people to act upon. These tasks will be accessible in the Tasks module in Oracle Aconex.

The Tasks page is like your Oracle Aconex home page. It lists the tasks that you need to action, which projects you are on and provides shortcuts to some common actions. In particular, the Tasks Page will display all outstanding and overdue document approvals (workflows). Tasks can be shown for a particular project, or across all projects, to help you prioritise the most critical ones.

Figure 3: The task page gives users a quick and complete picture of new, outstanding, and overdue projects tasks with direct links to the relevant documents or mail correspondence.



Notifications of overdue items can automatically be sent by the system in addition to proactive reporting, to expedite reviews and move documents through workflow reviews and submittal management. Additionally, Oracle Aconex provides notifications to recipients for new or updated documents, tasks or correspondence. These system notifications can also be pushed to user’s local email programs (i.e.: Outlook) based on user or organisation preferences.

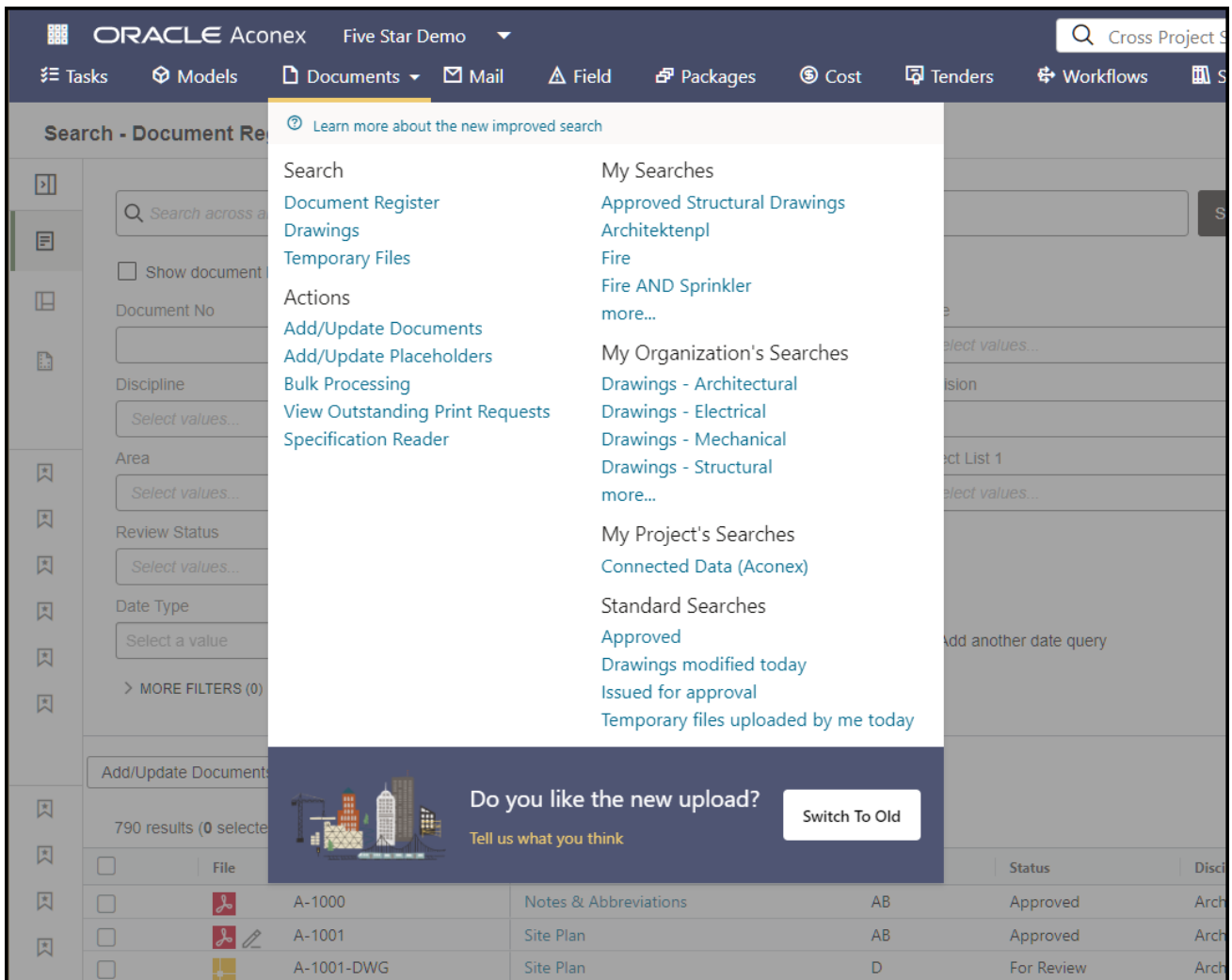
Document Management

Oracle Aconex provides a private document register for each organisation or department participating in a project. Organisations can access this register in the Documents Module, which can support any file type, of any size. Oracle Aconex stores revisions of every document uploaded onto the system.

Oracle Aconex is highly configurable, providing flexibility in the way information is captured and tagged. Oracle Aconex can support your requirements to meet PAS 1192 / ISO 19650 classification and process management through modules such as Documents and Workflows.

In this section, we will describe the entire lifecycle of a document within Oracle Aconex, whether they are a specifications document, a technical drawing or a CRS report. Oracle Aconex will manage all types of documents in the same manner.

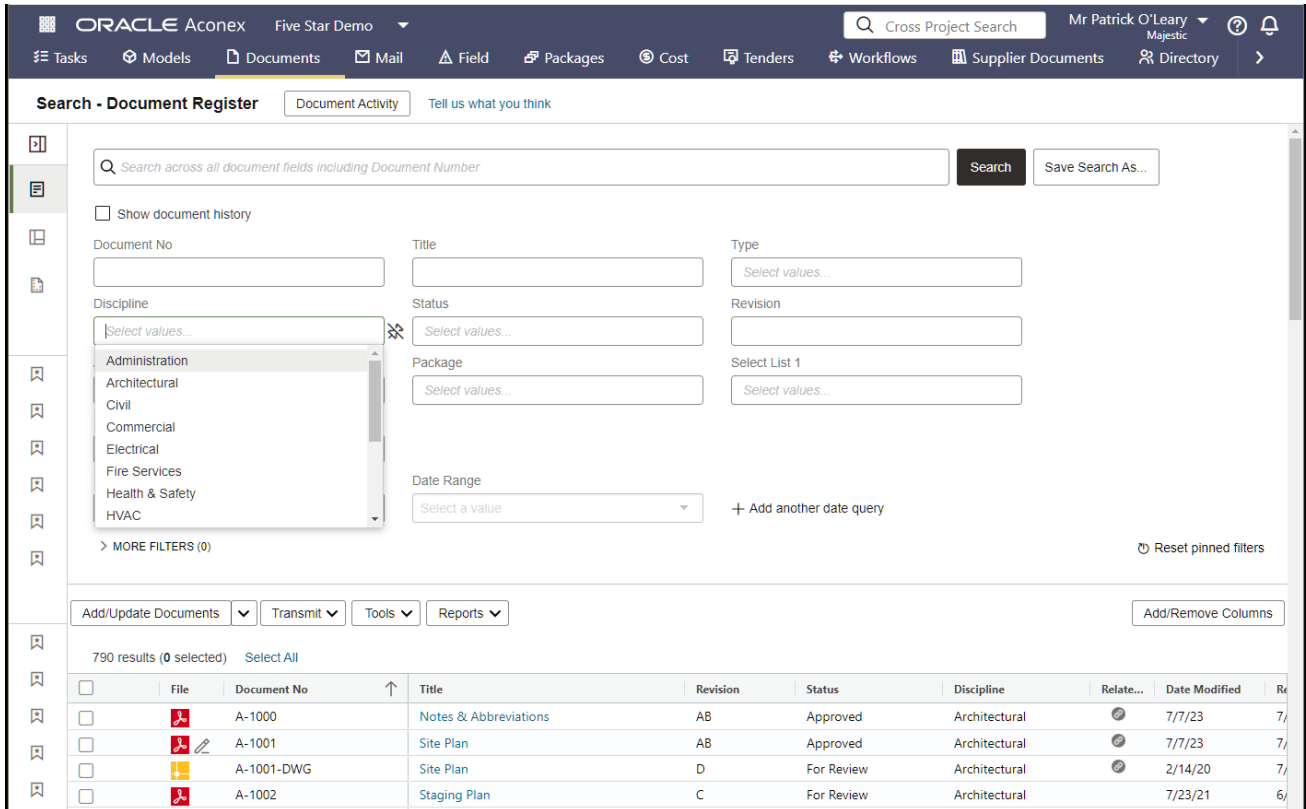
Figure 4: Oracle Aconex documents module.



Document Metadata

Oracle Aconex is a fully configurable platform that provides the project team with the flexibility to manage projects of any size and complexity, allowing users to register, search for and retrieve their project information (Documents, Correspondence, Packages, Workflows etc...) using various metadata fields.

Figure 5: Document register.



Oracle Aconex has implemented a modern metadata-based approach for documents, which is best suited to the volume of documentation generated in a construction project. As a consequence, searching and finding a document is extremely easy using the powerful Oracle Aconex search engine. Combined with the neutrality approach, this avoids any painful administration burden to building the right access to the various levels of a document folder hierarchy (no more tedious permissions per folder), removing any risk related to poor management of access rights.

Oracle Aconex mandates a minimum of metadata fields for good document control and management.

- Document Number
- Title
- Revision
- Status – e.g. Draft, For Information, For Construction
- Type – e.g. Drawing, Model

The fields and attributes within the registers are defined by the project administrator and can be customised to support PAS 1192 / ISO 19650 requirements. Oracle Aconex provides the flexibility to define metadata fields to be applied to all documents, or to specific document types only. Indeed, a contract document or a technical drawing may require different metadata to be defined. Additional metadata fields can be configured as mandatory or optional.

Also, as part of the project setup, Oracle Aconex provides the flexibility to project administrators to configure several items to support specific project needs, including but not limited to:

- **Document statuses**, including “For Construction”, “Draft”, “Approved for Use”, “Information Only”, etc...
- **Auto-numbering** to comply with your project's document numbering rules. You can create several auto-numbering schemes and choose which document types the schemes apply to. You don't have to apply an auto-numbering scheme to every document type.

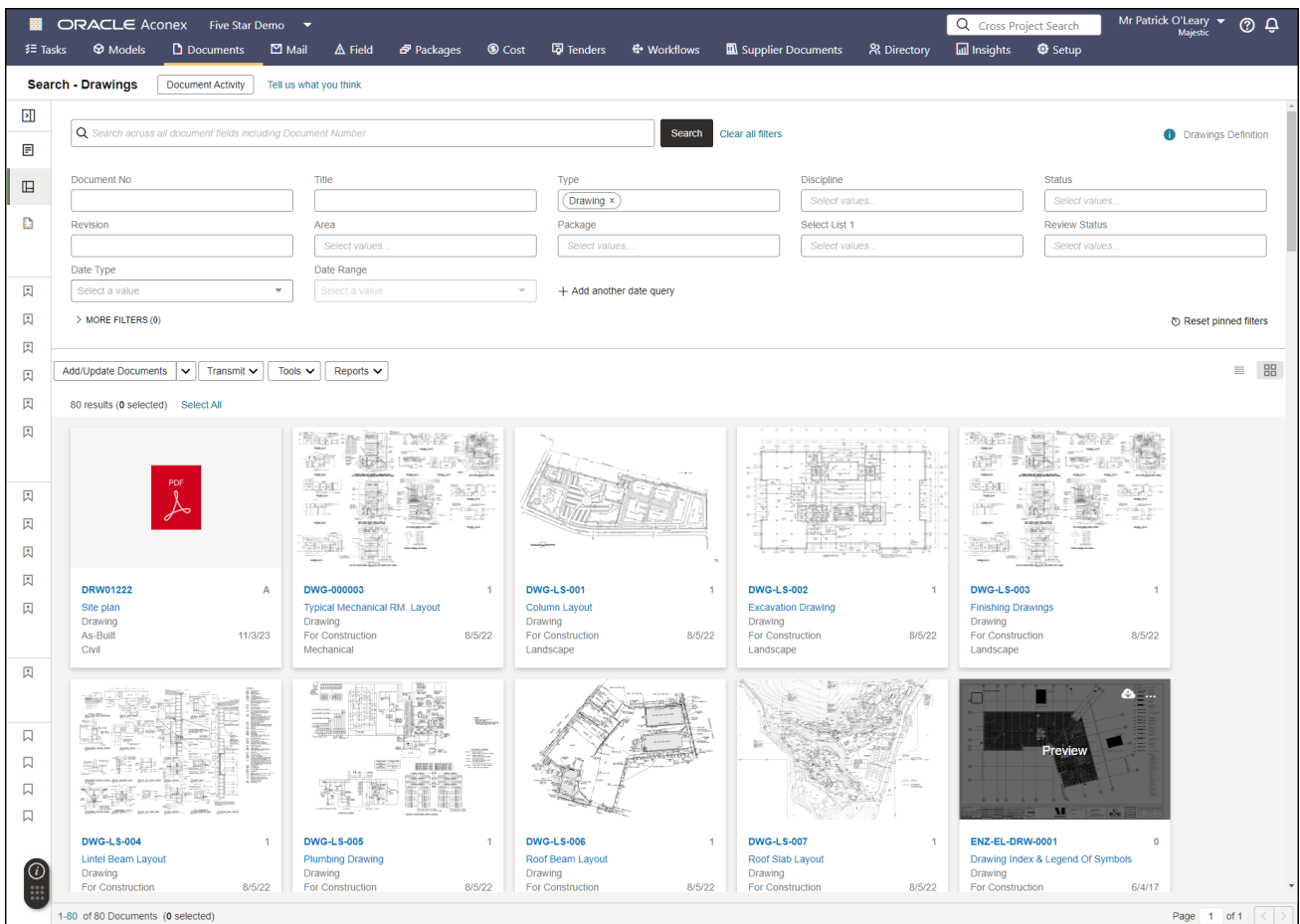
- Cascading metadata** to set relationships between certain document fields, so they show only after others are selected. For example, you could define a pertinent set of discipline fields to be displayed based on the type of document a user selects. This gives users fewer and more relevant options to choose from with each selection. It also minimizes the risk that they'll choose an inappropriate field value for the documents they're uploading.

Drawings

The Documents module includes a Drawings register which displays the latest versions of the PDF drawings that are key and critical to project execution. This is the same list that you will find in the mobile app when clicking on the 'Drawings' button.

Drawings can be displayed as thumbnails to help users find what they're looking for quickly. Users can switch to a List view format if they prefer to view drawing details.

Figure 6: Drawings register.



Drawings are a subset of your documents in the document register. By default, drawings are defined by the following rule:

Document Type = "Drawing" or "Shop Drawing" or "As Built Drawing" or "Plan"
 AND Status = "For Construction" or "Issued for Construction" or "As-built"

Oracle Aconex enables project administrators to configure this rule to meet your specific project needs.

Document Upload

Oracle Aconex makes it easy for users to upload documents in bulk or one by one:

- Simply drag and drop your file(s) from your computer into the space provided or click anywhere in the outlined space and choose the files from your computer.

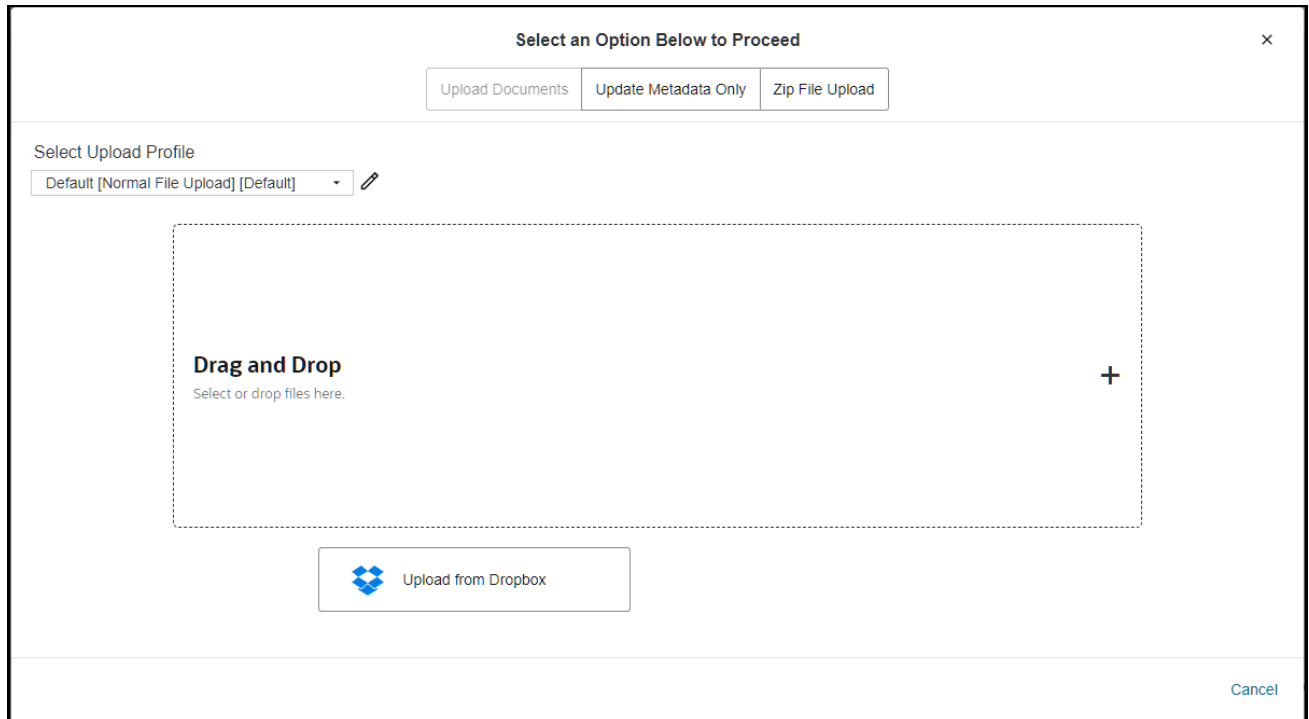
2. Fill in the metadata for your document(s) or import it from an Excel spreadsheet

These 2 steps are detailed below:

Step 1: Upload the files

The document upload interface is simple and requires little explanation:

Figure 7: Step one of document upload



There is an optional step which is the selection of a predefined 'Upload Profile'. Document upload profiles save you time by automatically populating metadata for you. It enables you to create a template of predefined values for the document metadata, and much more...

Indeed, filenames follow a strict naming convention on most projects and include many document properties. With an upload profile, you will be able to configure a ruleset with your filename convention, so Oracle Aconex can extract and populate these properties automatically for you, whenever your upload profile is used.

Figure 8: Definition of a document upload profile

Upload Information

Profile Name*

Profile Description*

Share with Organization Project

Use default document values Use the default document values specified below values

Extract document values from the filename System ruleset Custom ruleset

Format Use in Document Number

Type	-	X	<input type="checkbox"/>
Document No	-	X	<input checked="" type="checkbox"/>
Discipline	-	X	<input type="checkbox"/>
Title	-	X	<input type="checkbox"/>
Revision	-	X	<input type="checkbox"/>

Expand zip files Extract and upload individual files from zip file

Default Document Values

Type	<input type="text" value="Specification"/>	Discipline	<input type="text" value="Architectural"/>
Title	<input type="text"/>	Revision	<input type="text"/>
Status	<input type="text" value="For Review"/>	Milestone Date	<input type="text"/>
Planned Submission Date	<input type="text"/>	Area	<input type="text"/>
Package	<input type="text"/>	Created By	<input type="text" value="Majestic"/>

Step 2: Fill in the document metadata

Upon completion of step 1, your files will be listed on the left.

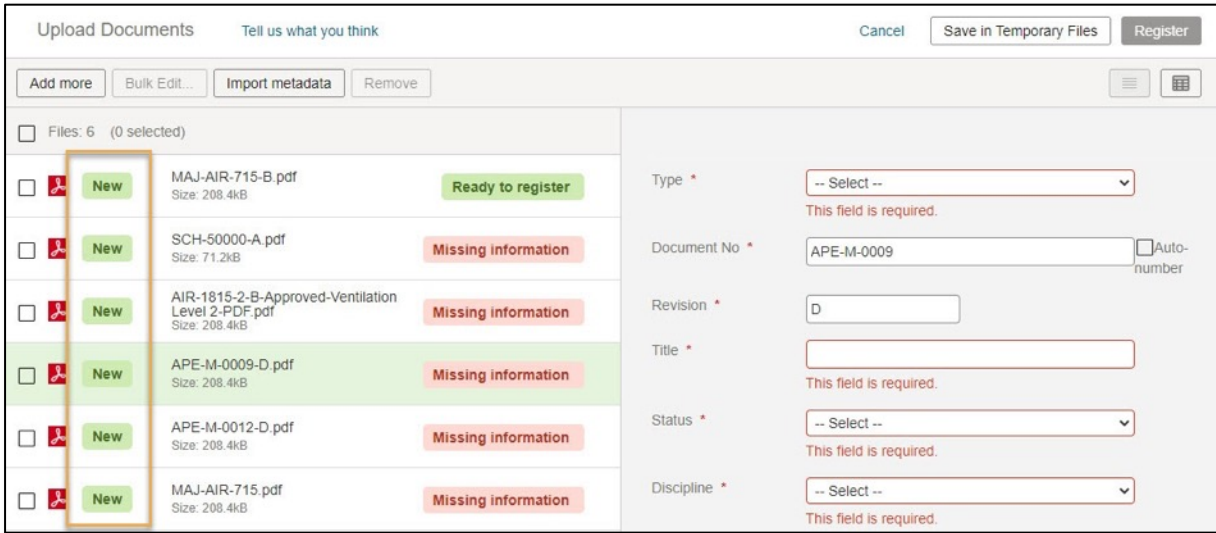
They will be labelled as ‘New’ unless the system has detected that a version of that document already exists, and in this case the document will be marked as ‘Update’.

If you selected an upload profile, the metadata for your documents may have been automatically populated for you. Those files will be marked as ‘Ready to register’.

If any files are marked as ‘Missing information’, you’ll need to select them and to enter the required metadata either manually or using an Excel import. If required, select multiple files and click ‘Bulk Edit’ to update their metadata in one go. For example, you may want to set the Discipline as Electrical for all except one of the files you just uploaded.

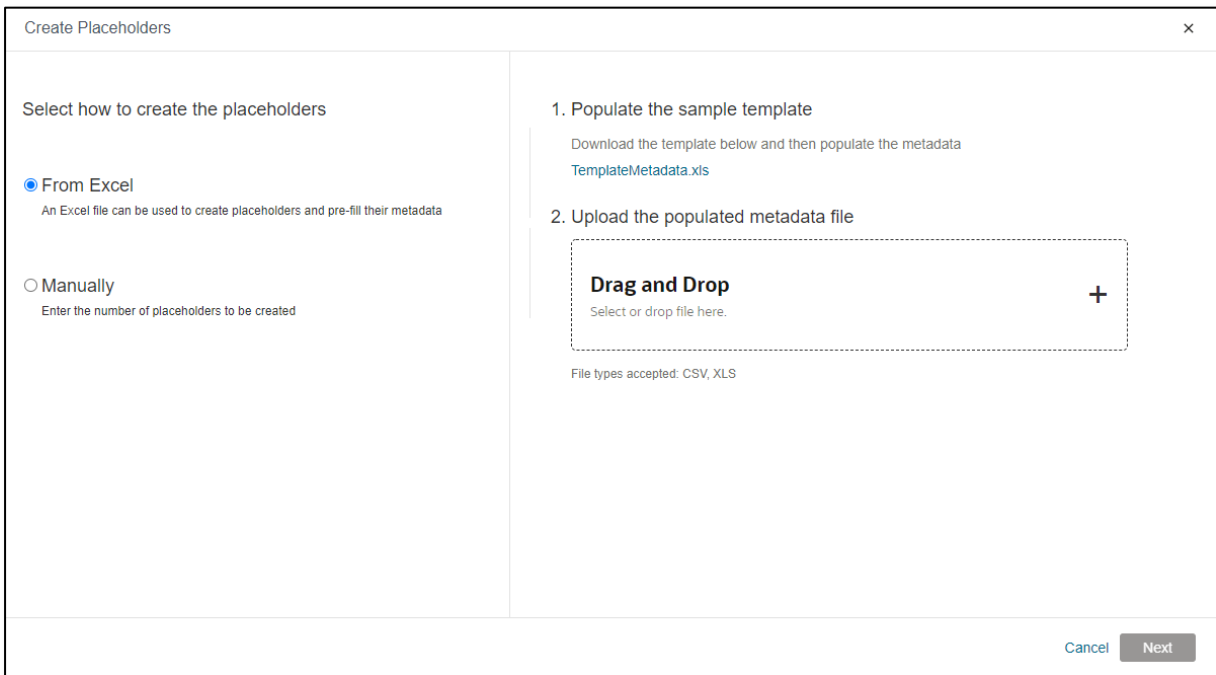
When all documents are marked as ‘Ready to register’, you can click the ‘Register’ button.

Figure 9: Step 2 of document upload.



Last but not least, Oracle Aconex enables you to create placeholders for your documents in seconds. This proves to be very useful if a list of document deliverables is established at project start or need to reserve document numbers ahead of time. Creating document placeholders enables you to define the metadata for all your future documents, that supplier will need to provide in due course.

Figure 10: Creation of document placeholders.



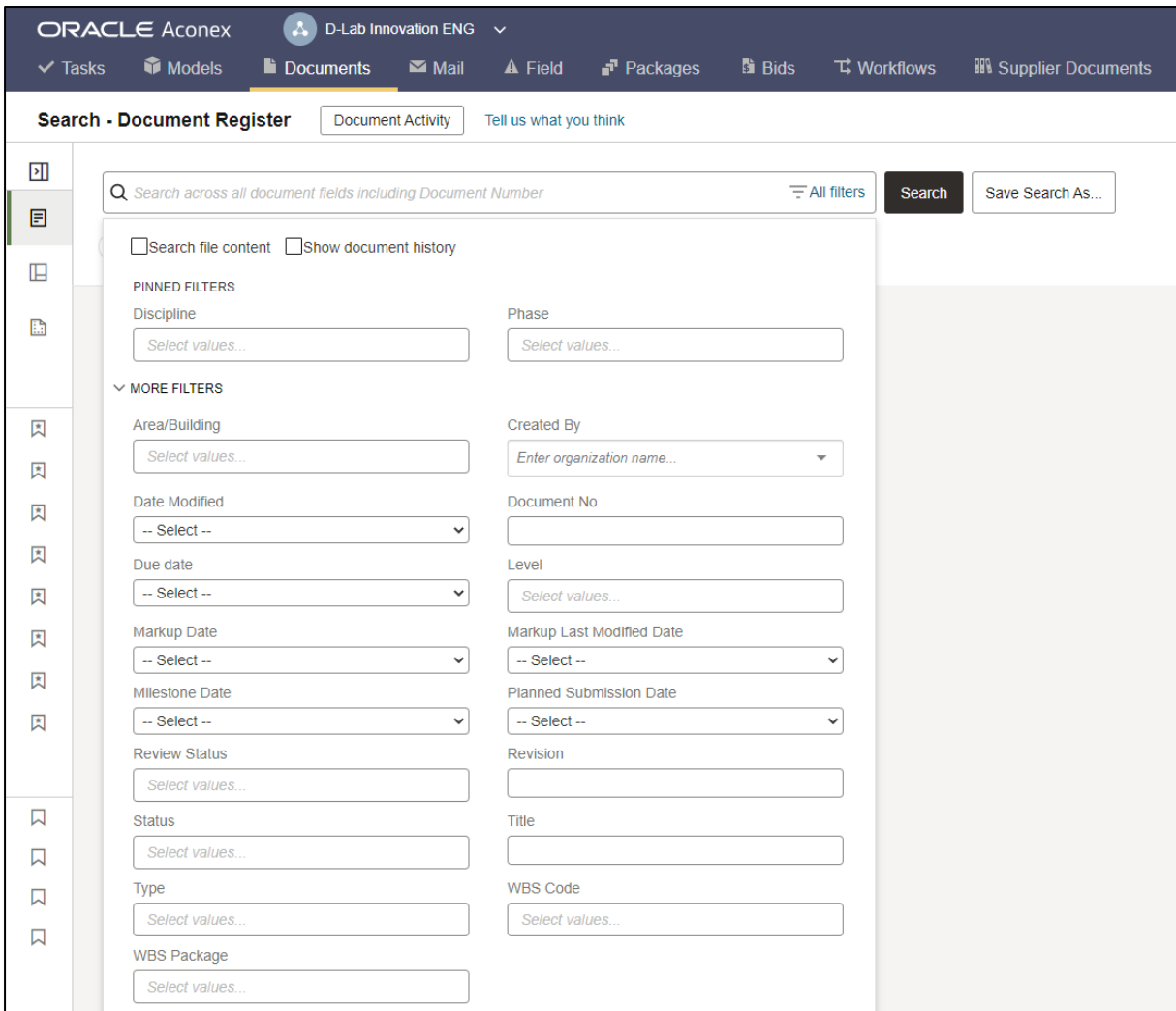
Document Search

The document register utilises a powerful search function that allows for cross-project searching, searching across various document attributes ('Google-like' search experience) as well as searching within the content of documents, which are indexed upon upload. This is currently available for all documents such as rich PDF, Word, Excel and PowerPoint documents.

Searching for information in Oracle Aconex is fast and flexible - just choose your search options and Oracle Aconex finds all information available using your search terms and definitions. Any metadata field that you have defined on your project will be available in the Oracle Aconex search.

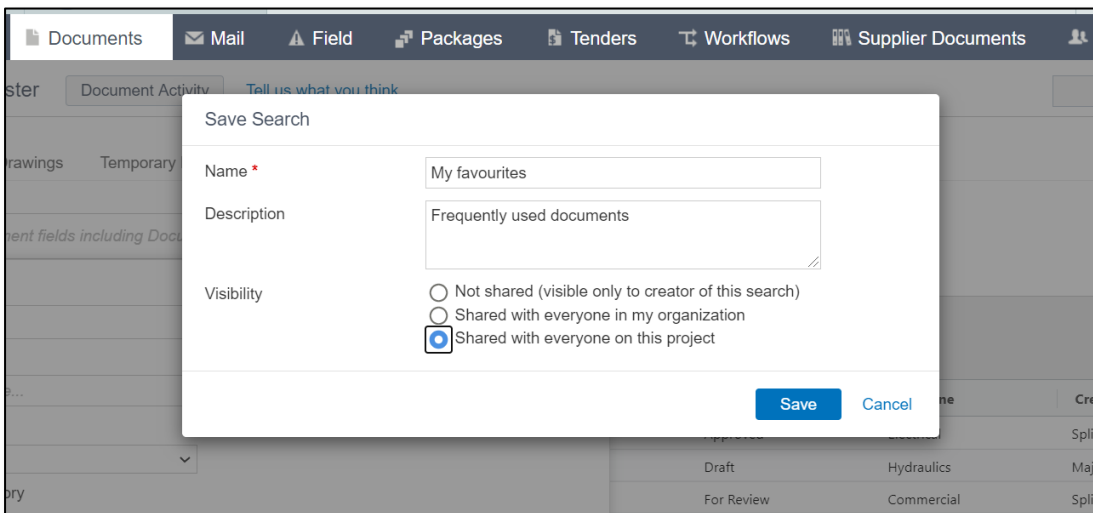
If needed, complex searches can also be built in Oracle Aconex using Boolean and wildcard expressions.

Figure 11: Full document search.



Frequent searches can also be saved to create your own list of favourites or shared with the project team or your entire organisation.

Figure 12: Saving and sharing a frequent search.



Audit Trail

Oracle Aconex provides a complete audit trail providing a single record of the truth, including all system activities, from document revisions, to approvals, to RFIs and responses. The information is captured automatically on all documents registered in the system. Once a document is registered, it cannot be deleted or modified, and the audited activities relating to that document cannot be altered.

An audit trail is maintained by the application, which is most evident in the document event log. The audit trail allows the organization to access a document and see who updated/downloaded the document and when. The Event Log displays the actions taken against each version of the document with information such as:

- Who downloaded the document,
- When and to whom it was distributed (Transmitted), and
- The review status, when managed through the Workflow module, of each version.

Figure 13: Document event log.

Event Log - SECT-09300 - CERAMIC TILING						
Type	Event	Revision	Version	Time	User	Organization
View	Viewed	B	15	10/29/21 12:09 AM	Tim Yeung	Majestic
View	Downloaded	B	15	10/27/21 10:06 PM	Patrick O'Leary	Majestic
View	Viewed	B	15	10/27/21 10:06 PM	Patrick O'Leary	Majestic
View	Viewed	B	15	10/27/21 10:06 PM	Patrick O'Leary	Majestic
Send	Sent (MAJ1-WTRAN-000079)	B	15	10/27/21 10:06 PM	Patrick O'Leary	Majestic
Update	Edited	B	15	10/27/21 10:06 PM	Patrick O'Leary	Majestic
Update	Edited (File Changed)	B	15	10/27/21 10:06 PM	Patrick O'Leary	Majestic
View	Viewed	B	14	10/27/21 10:06 PM	Patrick O'Leary	Majestic
View	Viewed	B	14	10/27/21 10:05 PM	Patrick O'Leary	Majestic
View	Viewed	B	14	10/27/21 10:04 PM	Patrick O'Leary	Majestic
View	Viewed	B	14	10/27/21 10:04 PM	Kim Nga	Majestic
View	Viewed	B	14	10/27/21 10:04 PM	Kim Nga	Majestic
Send	Sent (MAJ1-WTRAN-000078)	B	14	10/27/21 10:04 PM	Kim Nga	Majestic
Update	Edited	B	14	10/27/21 10:04 PM	Patrick O'Leary	Majestic

Also, your organisation can report on documents, mail or use the dashboards for a quick overview about your projects. Oracle Aconex reports can be customised and configured to the reporting needs of the user.

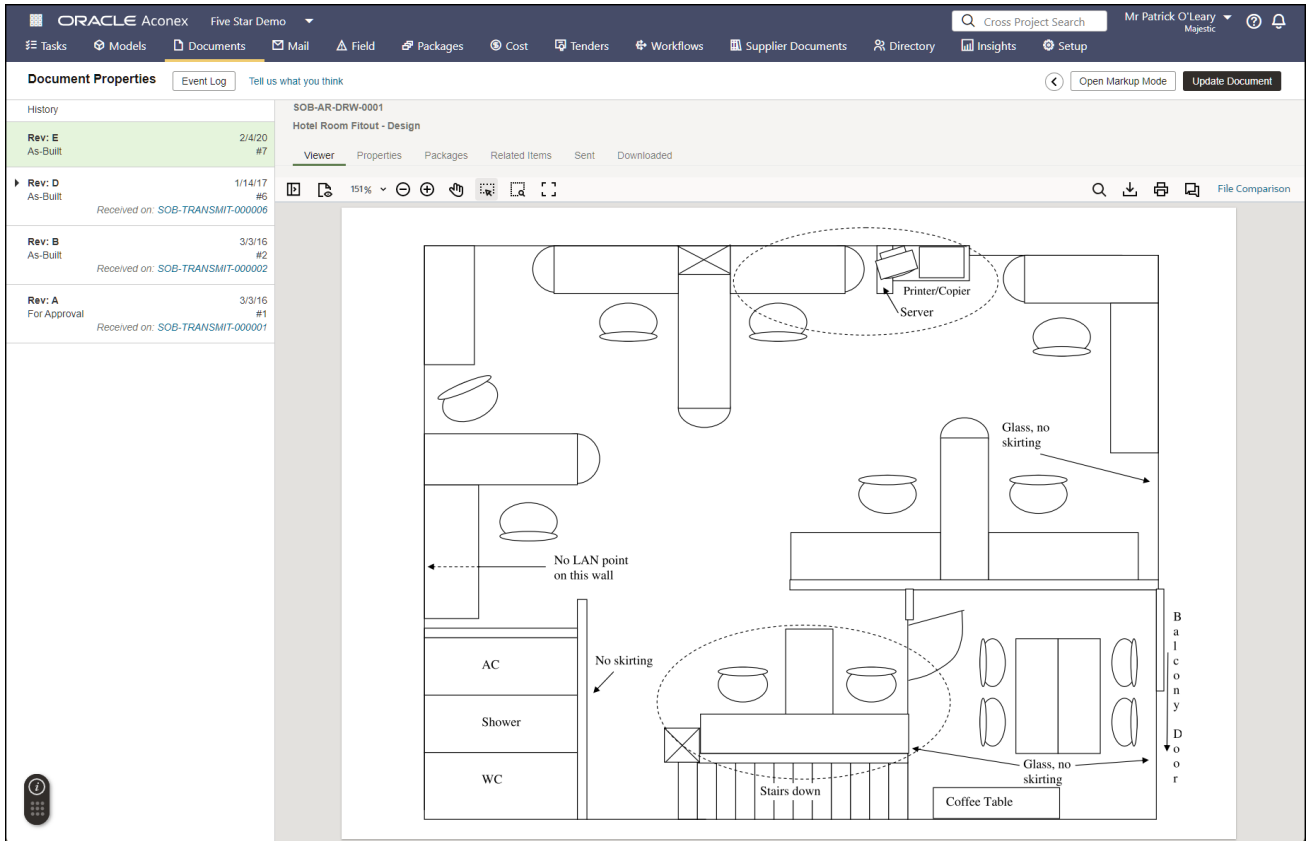
Users can export Oracle Aconex reports in a format that suits them. Once they have compiled and formatted their report, they can easily export it to their computer or local network

User login audit logs can be generated upon request by the Oracle Helpdesk. Archives can be produced with all document revisions, event logs, mail, mail attachments and associated metadata. The archive includes the same search engine as the Oracle Aconex application. Retrieving and searching for data on Oracle Aconex is easy and can be done from within the application.

Version Control

There is no limitation to file size when registering or transmitting a document via Oracle Aconex. All versions of a document are kept in the document module and users can see any additions or deletions through the history of a document. When the next version of a document is loaded or received, the previous version is placed in the history of that document. Note that ALL versions remain on the system and can be accessed through the document history.

Figure 14: Document history is maintained - no deletion is allowed, guaranteeing an unalterable audit trail and full traceability of the documents.



Also, Oracle Aconex uses 2 key fields to control the revisions of a document:

- **Revision** – This is an alphanumeric field in Oracle Aconex, hence it can be a number or a letter, or a combination of both, to meet the project requirements. This field allows the implementation of a manual or automatic revision scheme to the project team; users are in control of this field.
- **Version** - This is a numeric field in Oracle Aconex, and it is incremented automatically every time a new revision of a document is uploaded.

Figure 15: Versioning and revisioning are at the core of Oracle Aconex. The Document Register allows a manual or automatic revision scheme and the system automatically creates a version number.

File	Document No	Title	Revision	Version	Status	Discipline	Created By
	SECT-09300	CERAMIC TILING	B	15	For Construction	Architectural	Splice Architecture
	SECT-09300	CERAMIC TILING	B	13	For Construction	Architectural	Splice Architecture
	SECT-09300	CERAMIC TILING	B	14	For Construction	Architectural	Splice Architecture
	SECT-09300	CERAMIC TILING	B	12	For Construction	Architectural	Splice Architecture
	SECT-09300	CERAMIC TILING	B	11	For Construction	Architectural	Splice Architecture
	SECT-09300	CERAMIC TILING	B	10	For Construction	Architectural	Splice Architecture
	SECT-09300	CERAMIC TILING	B	9	For Construction	Architectural	Splice Architecture
	A-1001	SITE PLAN	C	26	Approved	Architectural	Splice Architecture
	A-1001	SITE PLAN	C	24	Approved	Architectural	Splice Architecture
	A-1001	SITE PLAN	C	25	Approved	Architectural	Splice Architecture

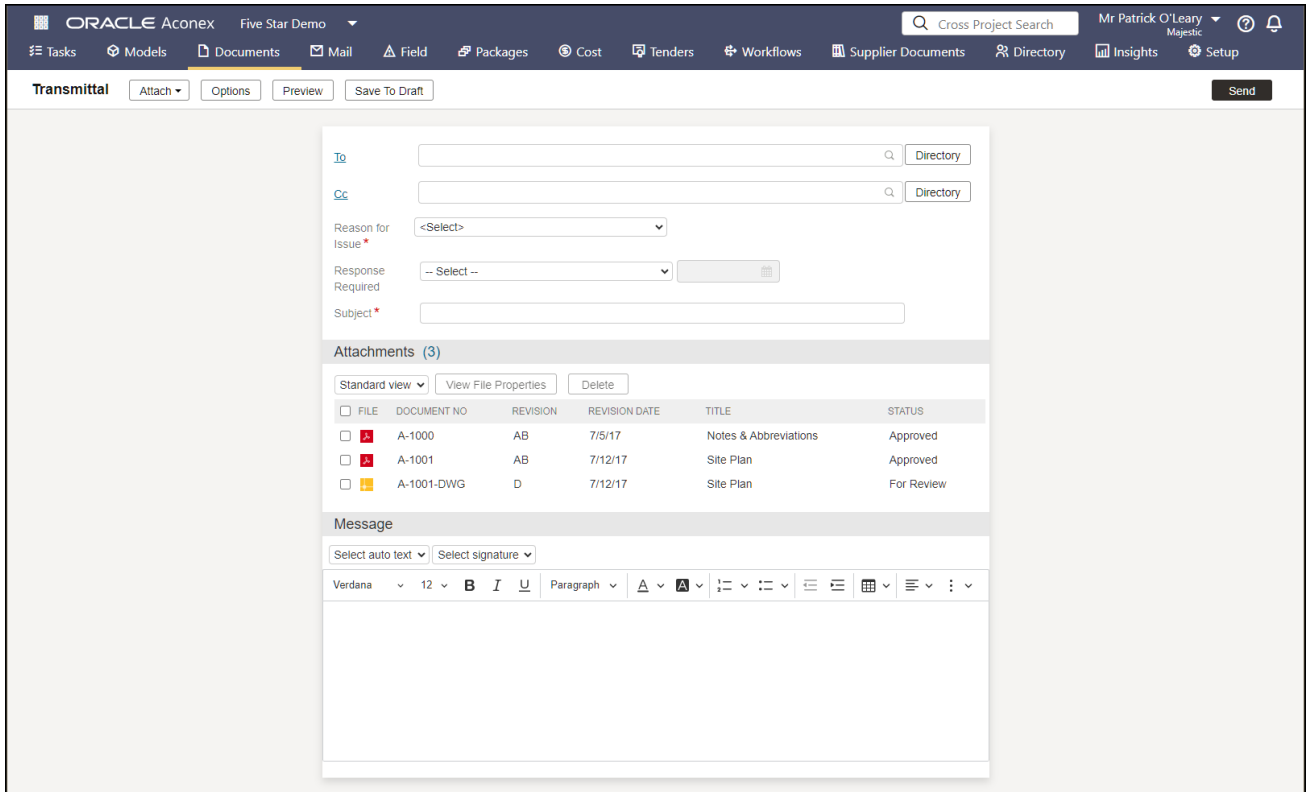
Transmittals

Documents within the register can be transmitted electronically to any party involved on your projects. Transmittals include the same information as a paper cover sheet, with direct links to the underlying documents. An inbound transmittal automatically updates the recipient’s document register, ensuring all relevant parties have immediate

access to the latest revisions saving hours of time previously spent uploading, emailing, and recording the movement of documents/versions manually.

The Transmittal feature in Oracle Aconex is used to transmit documents (either singularly or multiple document) and track decisions and actions.

Figure 16: Screenshot of a transmittal in Oracle Aconex



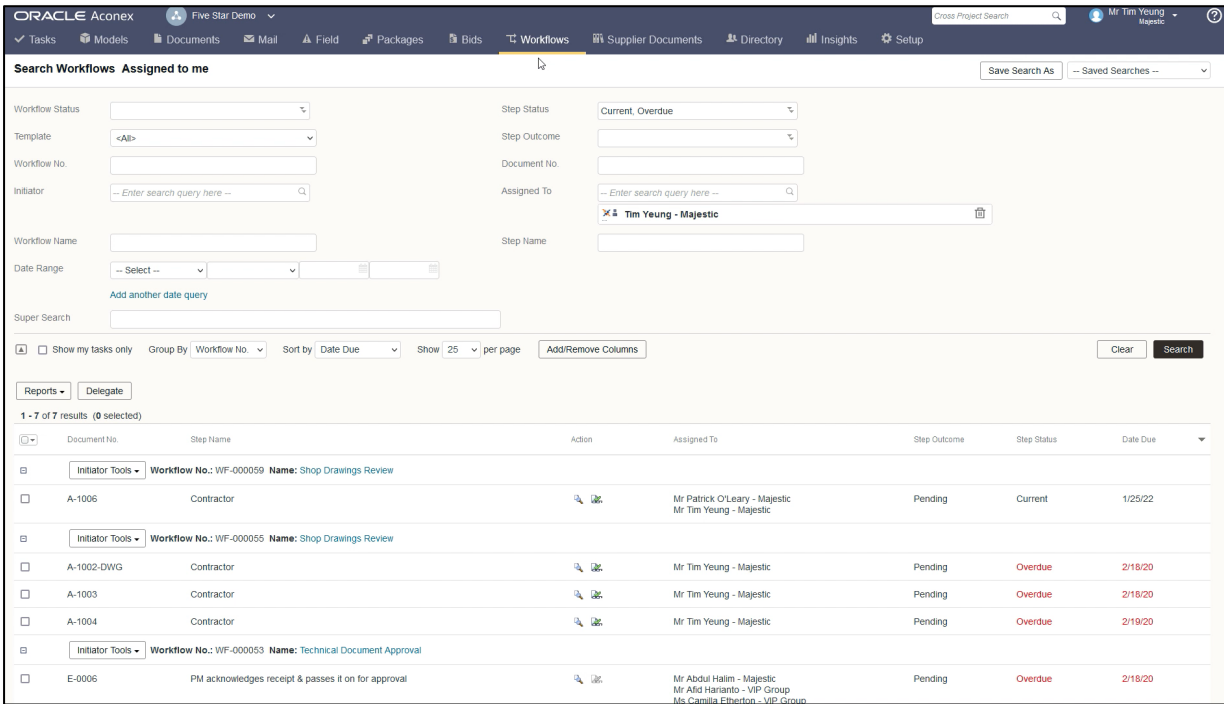
Transmittals can be sent from anywhere in Oracle Aconex using the 'Transmit' function. There are several Transmittal options which makes updating transmittals easy and quick.

Workflows

The Oracle Aconex workflows module can automate repetitive functions, accelerate turnaround, and reduce administrative delay in approval cycles. Improved visibility helps identify process bottlenecks and managers can view a complete audit trail and monitor progress across multiple workflows in real time. The Workflows module is key to improving project governance in document reviews and approvals.

Workflows can be built in just a few clicks, by permitted project users, as templates which map to and follow project processes. Steps can be added easily in a workflow using drag and drop functionality; these can be serial or parallel depending on the required outcome for the document and expected durations can be defined for each step (which will be used to identify late tasks).

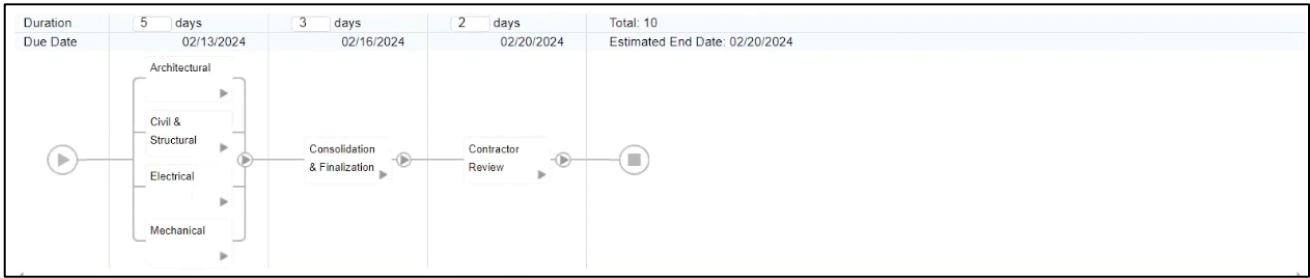
Figure 17: Workflow screen.



Workflows can be linked together, creating sub-workflows, allowing each organisation to build and manage their own internal workflows without affecting the main project workflow. Both standard and ad-hoc workflows can be easily created by all users and are ready to go in a few minutes.

Figure 18: Examples of workflows.

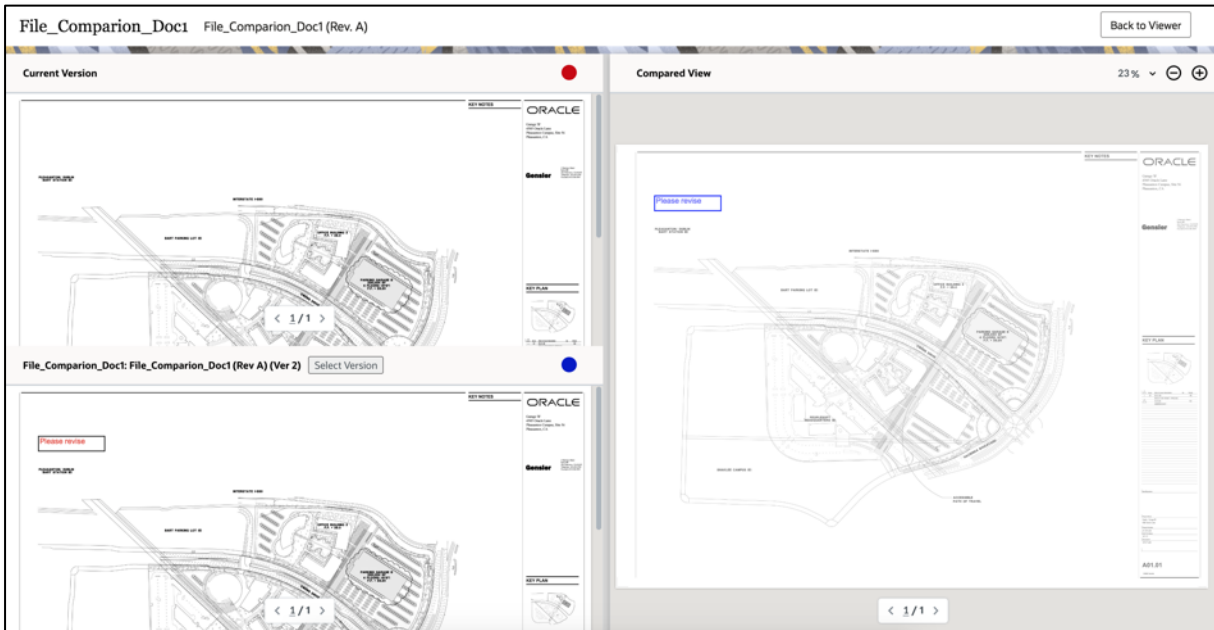




Oracle Aconex also makes management of all your submittals simpler, providing a specific workflow register and a number of useful standard reports. During the workflow process, your organisation will have visibility as to where the documents sit at all times.

Last but not least, Oracle Aconex provides a file comparison feature that enables document reviewers to compare the current version of a PDF document submitted in a workflow with any available previous version of the same document in their document register. The comparison detects text or drawing changes between the files. The differences are displayed in a compared view using a unique colour for each file to visualize what has been added or removed between the 2 versions.

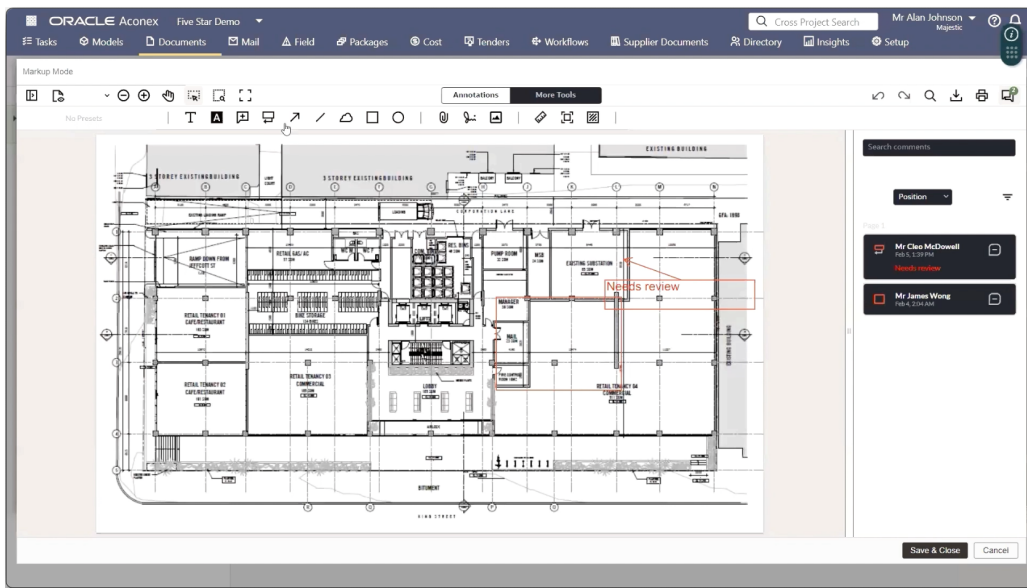
Figure 19: PDF file comparison in Oracle Aconex.



Online Viewer and Markup Tools

Oracle Aconex has an integrated browser-based online viewer allowing everyone to view and markup PDF files without requiring any additional software licenses or requiring installation of software onto users' computers.

Figure 20: Markup tools in the Oracle Aconex viewer.



Oracle Aconex provides real-time mark-up and overlay, including:

- Sticky Note & Callout
- Text, Text highlight, Underline, Squiggly and Strikeout
- Shapes (Square, Rectangle, Arrow, Cloud, and Polygon)
- Freehand drawing
- Signature tool
- Image-based Stamps (.png, .jpg and .gif)
- Dynamic Stamps
- Attachments

The Oracle Aconex viewer can be accessed through all modules including the workflows module. For example, users have the ability to turn on or off other user’s comments, determine from the document register if a document has mark-ups, and many other features.

Oracle Aconex also enables users to open and edit Office files (Word, Excel, PowerPoint) directly in Oracle Aconex. Although MS Office Online is a free integration, users must have an Office 365 subscription to edit files.

Supplier Documents

The Supplier Documents module automates and manages the large volume of vendor data generated on complex construction projects. It provides an efficient way to define the scope of each submittal package, visualise the progress of multiple packages of information by automating the calculation of due dates and statuses, regulate the submission of documentation and increase the speed of approvals and processing.

Through the Supplier Documents module, packages can also be compiled for ease of distribution.

Figure 21: Screenshot of Supplier Packages View

Package Number	Description	Required By	Supplied By	Progress Summary	Submission Required - Overdue	Submitted - Overdue	Total Documents
Highview004	docs	Majestic	Drummond	0%	0	0	1
HS-001	Safety Documents - Safety	Majestic	Drummond	13%	12	0	32
HS-002	Safety Documents - Civil & Structural	Majestic	Heist Engineers	9%	14	0	32
OM-001	Handover Manual - Mechanical	Majestic	Apex	0%	10	0	19
OM-002	Handover Manual - Electrical	Majestic	Excite	0%	10	0	19
SUB-001	Mechanical Submittal	Majestic	Apex	46%	0	0	13
SUB-002	Electrical Submittal	Majestic	Excite	28%	13	0	18
SUB-003	Structural Submittal	Majestic	Enzice	23%	3	0	22
SUB-004	Sustainability Submittal	Majestic	JPS	0%	0	0	36

The Supplier Documents Module allows users to search and report across multiple packages as well as individual packages to track submittal progress. Track due dates for individual submittals in a package for both the package owner and supplier and compare due dates with actual distribution dates to track performance.

Figure 22: Screenshot of Supplier Documents View

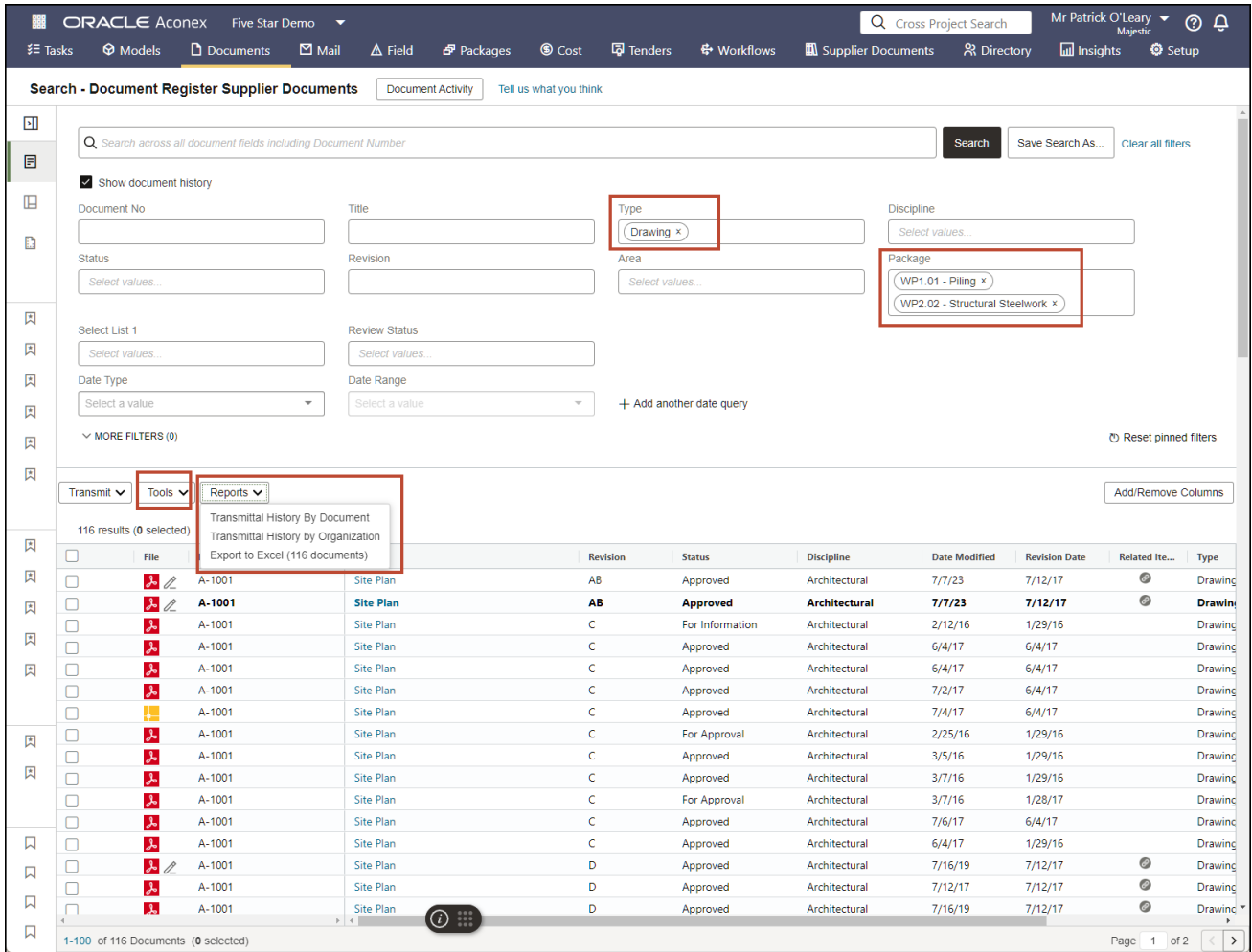
File	Document No	Title	Revision	Actions	Submission Status
Initiator Tools Package Number: Chapter 01 Description: Introduction					
<input type="checkbox"/>	WG-ADM-RPT-001	Project overview	A		Canceled
<input type="checkbox"/>	WG-ADM-RPT-002	Executive Summary	C		Completed
Initiator Tools Package Number: Chapter 02 Description: Emergency Contact Details					
<input type="checkbox"/>	WG-ADM-PRO-001	Emergency Contact Details - Building Manager	B		Completed
<input type="checkbox"/>	WG-ADM-PRO-002	Emergency Contact Details - Builder	B		Completed
<input type="checkbox"/>	WG-ADM-PRO-003	Emergency Contact Details - Plumbing	B		Completed
<input type="checkbox"/>	WG-ADM-PRO-004	Emergency Contact Details - High pressure gas	B		Not Started
<input type="checkbox"/>	WG-ADM-PRO-005	Emergency Contact Details - Security System	A		Canceled
<input type="checkbox"/>	WG-ADM-PRO-006	Emergency Contact Details - Fire Systems	A		Not Started
<input type="checkbox"/>	WG-ADM-PRO-007	Emergency Contact Details - Electrical	A		Canceled
Initiator Tools Package Number: Chapter 06 Description: Electrical Systems					
<input type="checkbox"/>	WG-ELE-DRW-001	Electrical system schematics - Level 1	B		Completed
<input type="checkbox"/>	WG-ELE-DRW-002	Electrical system schematics - Level 2	B		Completed
<input type="checkbox"/>	WG-ELE-RPT-001	Electrical system overview	A		Completed
Initiator Tools Package Number: Chapter 07 Description: Hydraulic Systems					
<input type="checkbox"/>	WG-HYD-DRW-001	Hydraulic system schematics - Level 1	B		Not Started
<input type="checkbox"/>	WG-HYD-DRW-002	Hydraulic system schematics - Level 2	A		Not Started
<input type="checkbox"/>	WG-HYD-RPT-001	Hydraulic systems overview	A		Not Started
<input type="checkbox"/>	WG-HYD-SPC-001	Hydraulic system specifications	C		Not Started
<input type="checkbox"/>	WG-HYD-WAR-001	Hydraulic system warranty	A		Not Started

Search - Supplier Documents

<input type="checkbox"/>	Initiator Tools ▾	Package Number: PO-000310	Description: Steel Package	Supplied by: West End Construction	Required by: Oracle			
<input type="checkbox"/>	ACX-DRW-00010	Structural Steel Plan Drawing - Area 2	1		Submission Required	Review in Progress	West End Construction	
<input type="checkbox"/>	ACX-DRW-00011	Structural Steel Plan Drawing - Area 3	1		Submission Required	Review in Progress	West End Construction	
<input type="checkbox"/>	ACX-DRW-00008	Structural Steel General Arrangement	A		Submitted	Approved as Noted	Oracle	
<input type="checkbox"/>	ACX-DRW-00009	Structural Steel Plan Drawing - Area 1	A		Submitted	Review in Progress	Oracle	
<input type="checkbox"/>	Initiator Tools ▾	Package Number: PO-051357	Description: PID Package	Supplied by: HOUChem	Required by: Oracle			
<input type="checkbox"/>	02480-PID-550-300	15PS Condensate Piping and Instrument Diagram	B		Submission Required	Review in Progress	HOUChem	
<input type="checkbox"/>	02480-PID-550-400	15PS Condensate Pump Piping and Instrument Diagram	B		Submission Required	Review in Progress	HOUChem	
<input type="checkbox"/>	Initiator Tools ▾	Package Number: PO-198912	Description: Residue Gas Heat Trace Engineering Package	Supplied by: HOUChem	Required by: Oracle			
<input type="checkbox"/>	92050-PID-800-010	CR5600 Piping and Instrument Diagram	A		Completed	Review in Progress	Oracle	
<input type="checkbox"/>	92050-PID-800-020	CR5610 Piping and Instrument Diagram	C		Completed		Oracle	
<input type="checkbox"/>	92050-PID-800-030	CR5620 Piping and Instrument Diagram	B		Completed	Review in Progress	Oracle	
<input type="checkbox"/>	92050-PID-800-040	Residue Gas Piping and Instrument Diagram	A		Completed	Review in Progress	Oracle	

The module also allows searching on the current review status of each submittal with access to view the submission history of submittals and track progress. View individual submittal properties to see all relevant metadata and sort search results based on a variety of criteria. The search function can also return group search results by package or a flatten search.

Figure 23: Screenshot of supplier document search.



Packages

Oracle Aconex provides a way to create Packages that depicts an area of Design, Construction or Completion Works for Handover to Asset Owner. The Package Module allows for each of the different Package types to have their own unique configurable metadata fields to ensure capture of information appropriate to the Package and process.

A Package is managed both internally and externally to allow for cross-organisation collaboration to gather the required documentation and/or Mail forms to complete the Package. Packages in their entirety can be work flowed for review, commenting and approval. The Package revision and version is controlled as is the distribution and control of updates through administrators and editors.

The Package Register is automatically updated with metadata changes and distribution details. The recipients of the Package can export the content to a folder structure as required at handover.

Figure 24: Screenshots of the packages register.

Search Packages

Tell us what you think

Package No: Package Title: Search Save Search Saved Searches More Filters (2) Clear All Filters

Package Type: State: Administrators:

Construction Work Package X
Engineering Work Package X

8 results Package Management Export Collapse Expand View Options

Package No	Package Title	Revision	Updates Available	State	Discipline	Package Type	Actions
CWP-001	Concrete Construction Package	A	Up to date	Open	Civil	Construction Work Package	...
CWP-002	Structural Steel Erection Package	A	Up to date	Open	Structural	Construction Work Package	...
CWP-003	Mechanical Installation Package	A	Up to date	Open	Mechanical	Construction Work Package	...
CWP-004	Electrical Installation Package	A	Up to date	Open	Electrical	Construction Work Package	...
EWP-001	Concrete Design Package	A	Up to date	Open	Civil	Engineering Work Package	...
EWP-002	Structural Steel Design Package	A	Up to date	Open	Structural	Engineering Work Package	...
EWP-003	Mechanical Design Package	A	Up to date	Open	Mechanical	Engineering Work Package	...
EWP-004	Electrical Design Package	A	Up to date	Open	Electrical	Engineering Work Package	...

More filters
11 search fields available

Search Filters

Pinned Filters
Remove All

Package Type
State
Administrators

Available Filters
Package Fields
Pin All
Revision
General Fields
Pin All
Editors

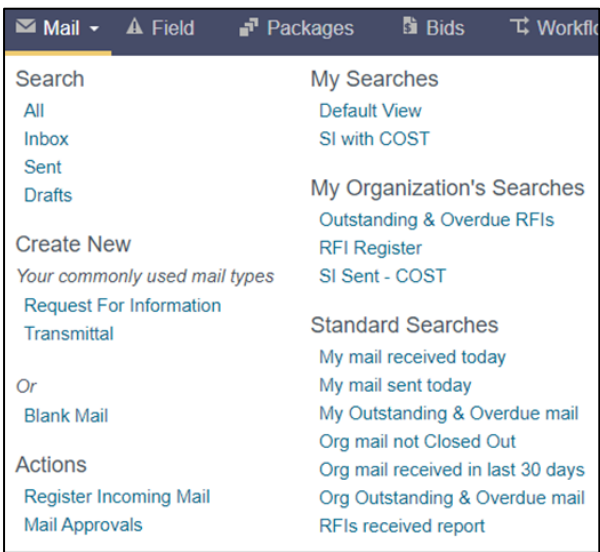
Correspondence Management

Oracle Aconex Mail Forms and correspondence management features offers you a tool to assist users in effectively communicating between other project users, assisting you in meeting deadlines and avoiding mistakes.

The below chart shows that on average over 3 million items of correspondence are typically exchanged on a project. Of these 58% are inter-organisation where companies are communicating and collaborating with each other for day-to-day execution of the project

Oracle Aconex Mail is an integrated mail module that is part of the Oracle Aconex Cloud Service which serves as a project mailroom for creating, delivering, recording and archiving all project correspondence (with or without attachments).

Figure 25: Oracle Aconex mail module.



Mail forms can be configured to each organisation’s own templates, maintaining corporate identity. Processes such as RFIs, Change Requests, Action Items, Meeting Minutes, etc... will all be modelled as Mail in the Oracle Aconex platform. They will have their own specific forms as defined by the project administrator, and rules will be configured to route the information to the relevant parties.

They key benefits of an Oracle Aconex Mail comparing to a standard email are:

- A Mail correspondence is automatically logged, and delivery is guaranteed. Each Mail will have a unique ID for easy referencing.
- A Mail cannot be deleted by any project participant once sent, and an unalterable audit trail is automatically created in Oracle Aconex, reducing the risk of claims and disputes.
- Mail correspondence are visible to the entire recipient organisation (unless the mail was marked as Confidential). As high staff turnover is a challenge in the construction industry, this will ensure information traceability, and remove the risk that the information leaves the organisation at the same time as a staff member. Hence also reducing the risk of claims and disputes.
- A Mail can easily be retrieved using attributes, wildcards, and free text filters.

There is no limit for files attachment, and documents stored in your document register can be attached easily.

Mail Forms

Mail Forms can be designed within Oracle Aconex providing you with the ability to apply customised fields on individual mail types (e.g. Transmittals, Submittals, RFIs, Meeting Minutes, Action Items, etc...) based on your individual projects' requirements. Fields can be configured as Mandatory or Optional upon creation of the forms.

Mail types can be assigned to organisations and users across the project(s) providing a consistent and repeatable data collection method.

Once activated and configured the users are presented with the Mail Form to complete prior to sending on the platform. The Mail Form can be configured to control which user group can complete certain field value information.

If you need to ensure specific mail types receive a response within a certain timeframe (for example RFIs need to be responded within 5 days), you can do so using the 'Response Required' field. As a project administrator, you will be able to set a default response time for each mail type, and senders will no longer have to work out themselves which date to use.

Figure 26: Example of change request form.

Type * ▼
Change Request

To Q Directory

Cc Q Directory

Response Required -- Select -- ▼ 📅

Subject *

Attributes

Attribute 1

Details

Details of Change * / 4000

Cost Implication? * -- Select -- ▼ ⓘ

Cost Implication Details / 4000

Schedule Implication? * -- Select -- ▼

Schedule Implication Details / 4000

Restricted Only visible to your organization

Estimated Cost USD

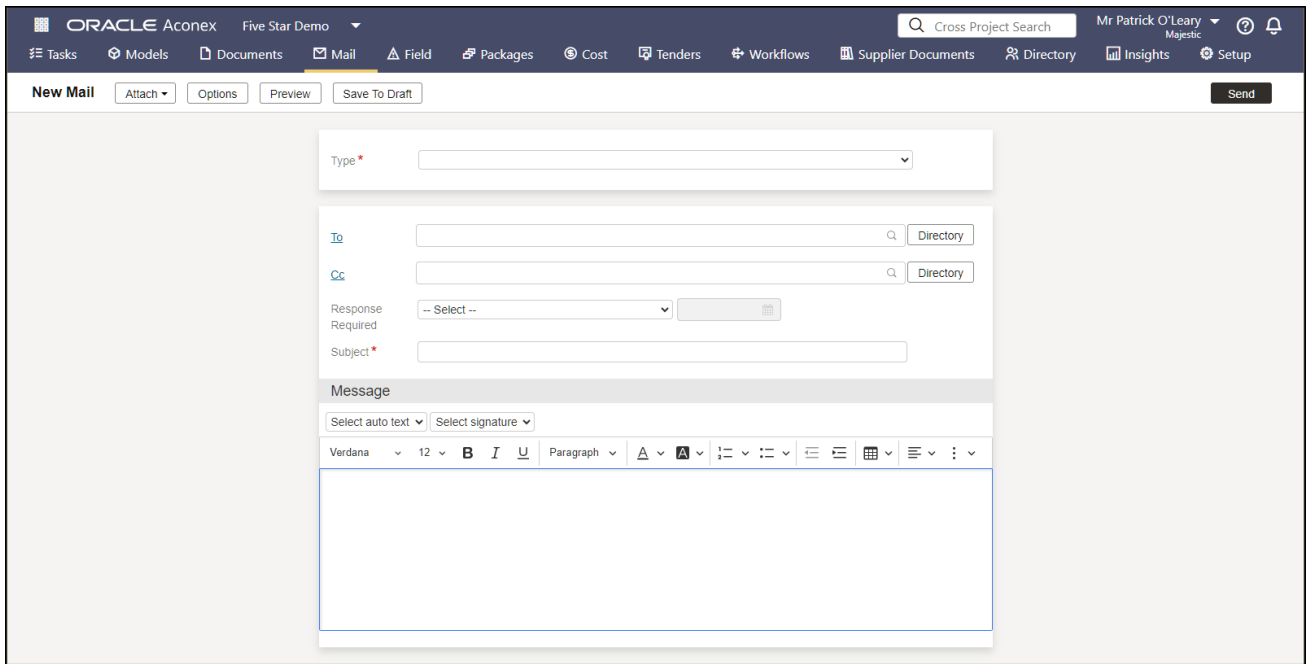
Estimated Schedule Adjustment day

Message

Select auto text ▼ TY Sig1 [default] ▼

Font ▼ Size ▼ **B** *I* U A A ☰ ☰ 📅 📄 📄 More...

Figure 27: Oracle Aconex mail module.



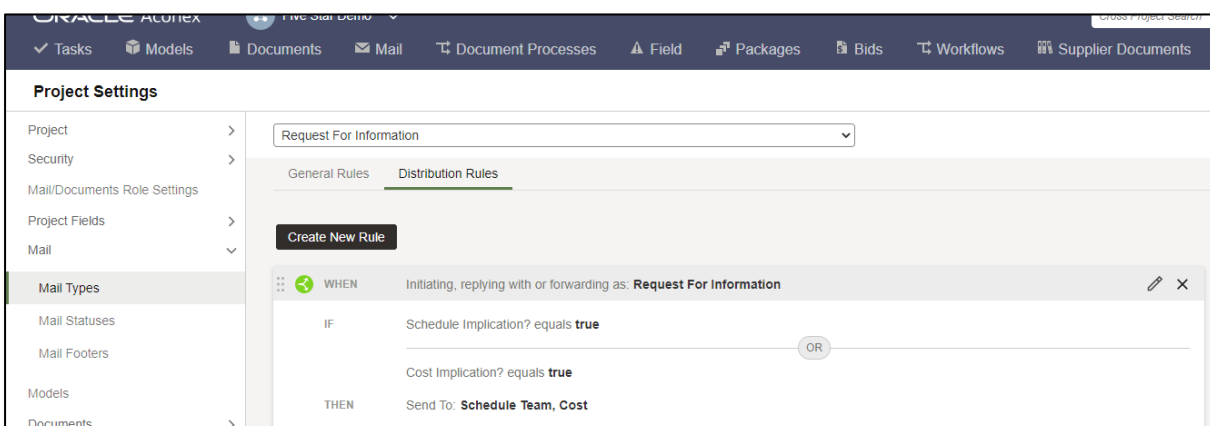
Distribution Rules

To ensure that the right mail goes to the right people at the right time, distribution rules enable you to route mail to specific groups or individuals, and determine mail process workflows based on type, field values and who originates the mail.

They help maintain consistency and ensure the right people get the right communication based on specific criteria you set. This makes reporting much easier down the track and ensure that you meet any mandatory communications requirements in your contracts.

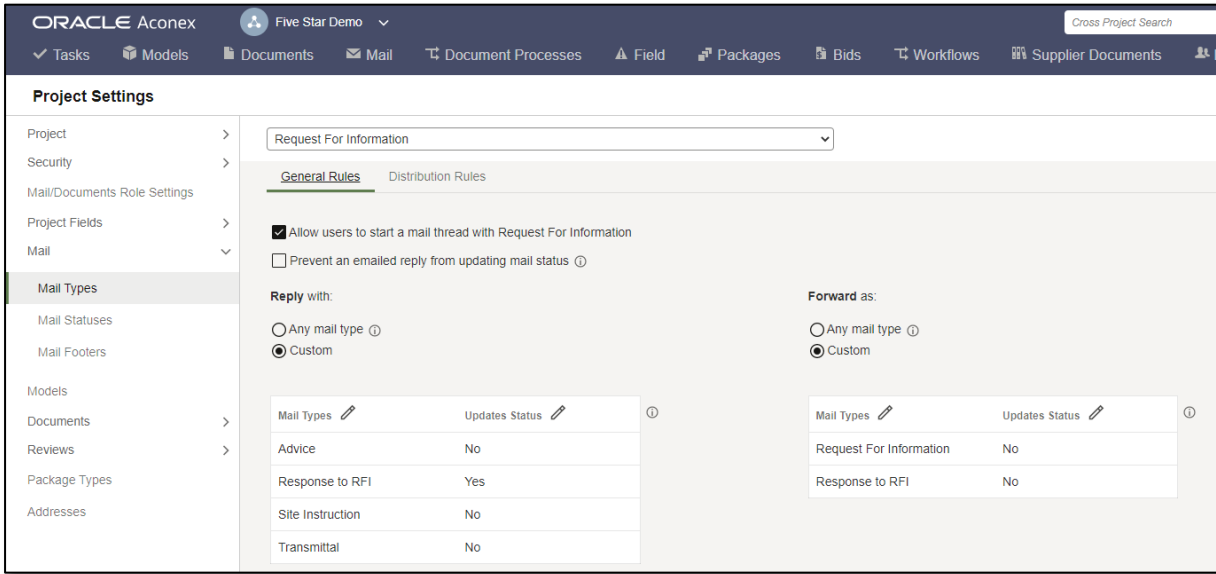
For example, you may want to create a distribution rule for a Change Request mail type, in order to route any CR to the project management team for review and approval. And another distribution rule to additionally route the CR to the Project Finance Team if the CR has a cost impact on the project.

Figure 28: Definition of a distribution rule for a RFI Mail type.



Additional mail rules can be configured, for example to control which mail types can be used for certain business processes. As a project admin, you can specify which mail types are allowed to be used for starting a mail thread, and which can be used for replying and forwarding. This means fewer mistakes as it is easier for users to choose the right mail type. For greater control over your mail processes, you can also specify which mail types will complete a process when used.

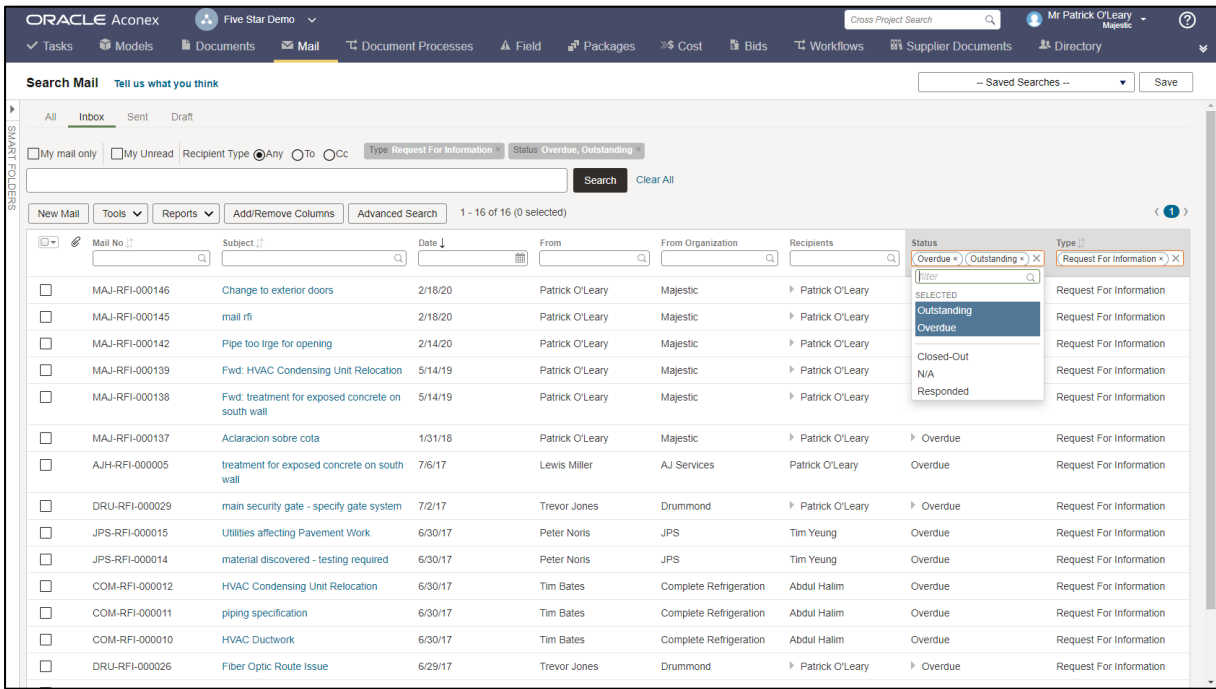
Figure 29: Definition of general rules for an RFI mail type.



Mail Search and Process Thread

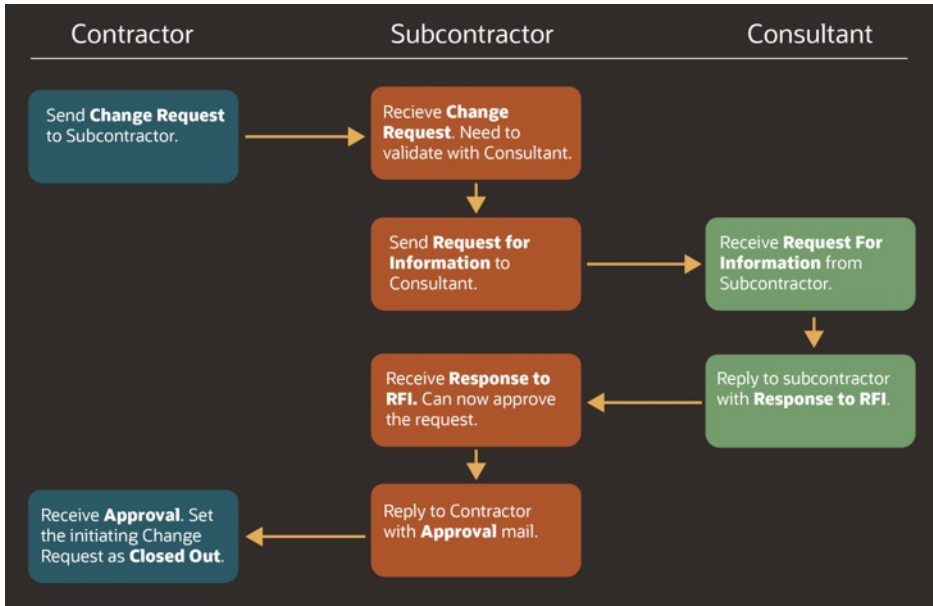
Users can use Oracle Aconex's powerful Mail search to filter their mail. For example, you could quickly search for all of your outstanding and overdue RFI's that you are awaiting responses to / from Organisation A and B over the last 60 days. Notifications and your Task page will illuminate in red when a mail correspondence exceeds the pre-arranged and agreed upon time.

Figure 30: Search for outstanding and overdue RFI's.



As we have seen previously, a typical construction process like a RFI or Change Request is managed in Oracle Aconex using Mail. Multiple mails can be combined as illustrated below to form an end-to-end process; a process often involves multiple organisations and uses different mail types.

Figure 31: Example of an end-to-end process.

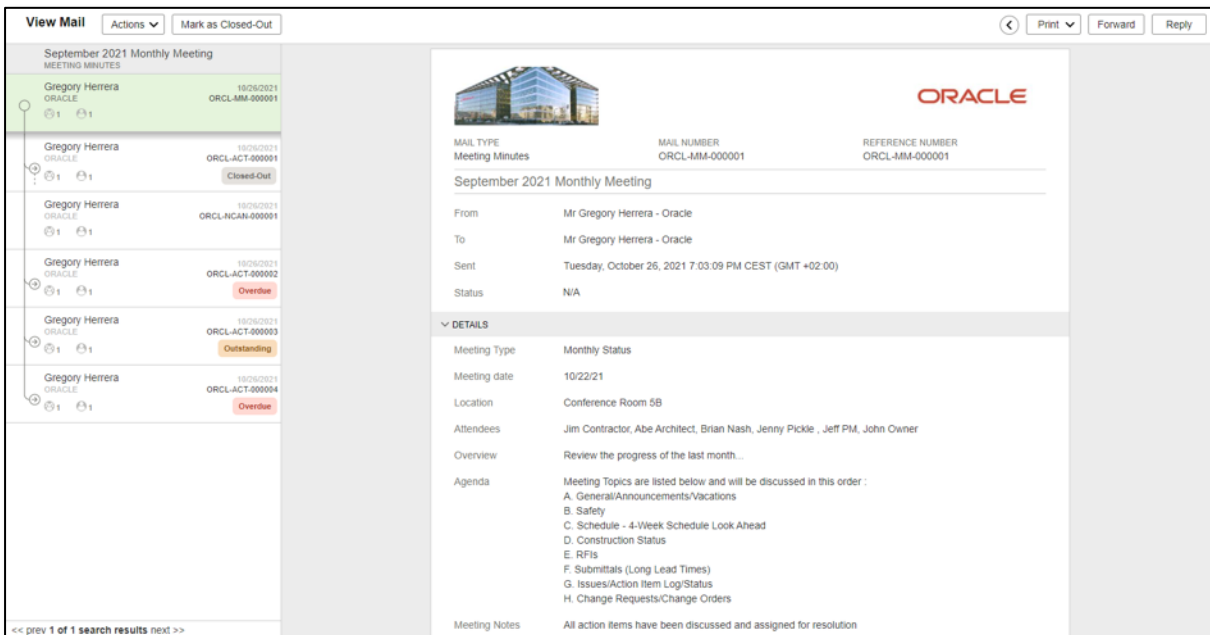


In the example above, the end-to-end process (also called mail-based process) uses 4 different mail types: Change Request, RFI, Response to RFI and Approval. While every Mail in Oracle Aconex has its own unique identifier, all Mail correspondence in the above diagram will reference the original Change Request Mail, so users can define and track an entire mail thread process with a single identifier.

An end-to-end process can be seen in Oracle Aconex in a graphical tree. After finding and opening a Mail correspondence, its entire thread is displayed on the left side of the screen, and the right-side of the screen displays the details of the Mail correspondence selected in the thread.

Hence, the Oracle Aconex Mail module can be used to log Meeting Minutes and record Action Items agreed during the meeting, so they can be tracked independently until they are closed out.

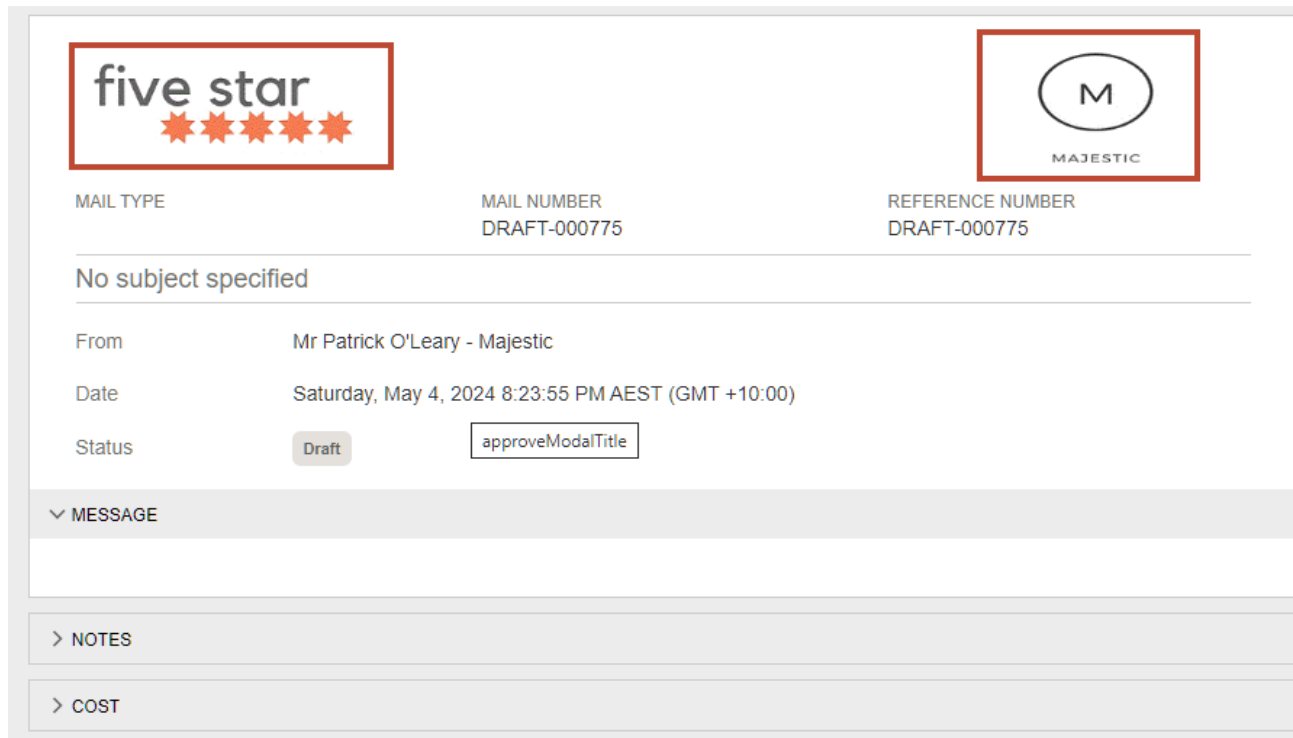
Figure 32: Example of a thread for meeting minutes.



Company Information and Logos

Specific client branding can be configured in Oracle Aconex. For example, project Mail can include your organisation’s logo as well as your signature.

Figure 33: Example of logo configuration.



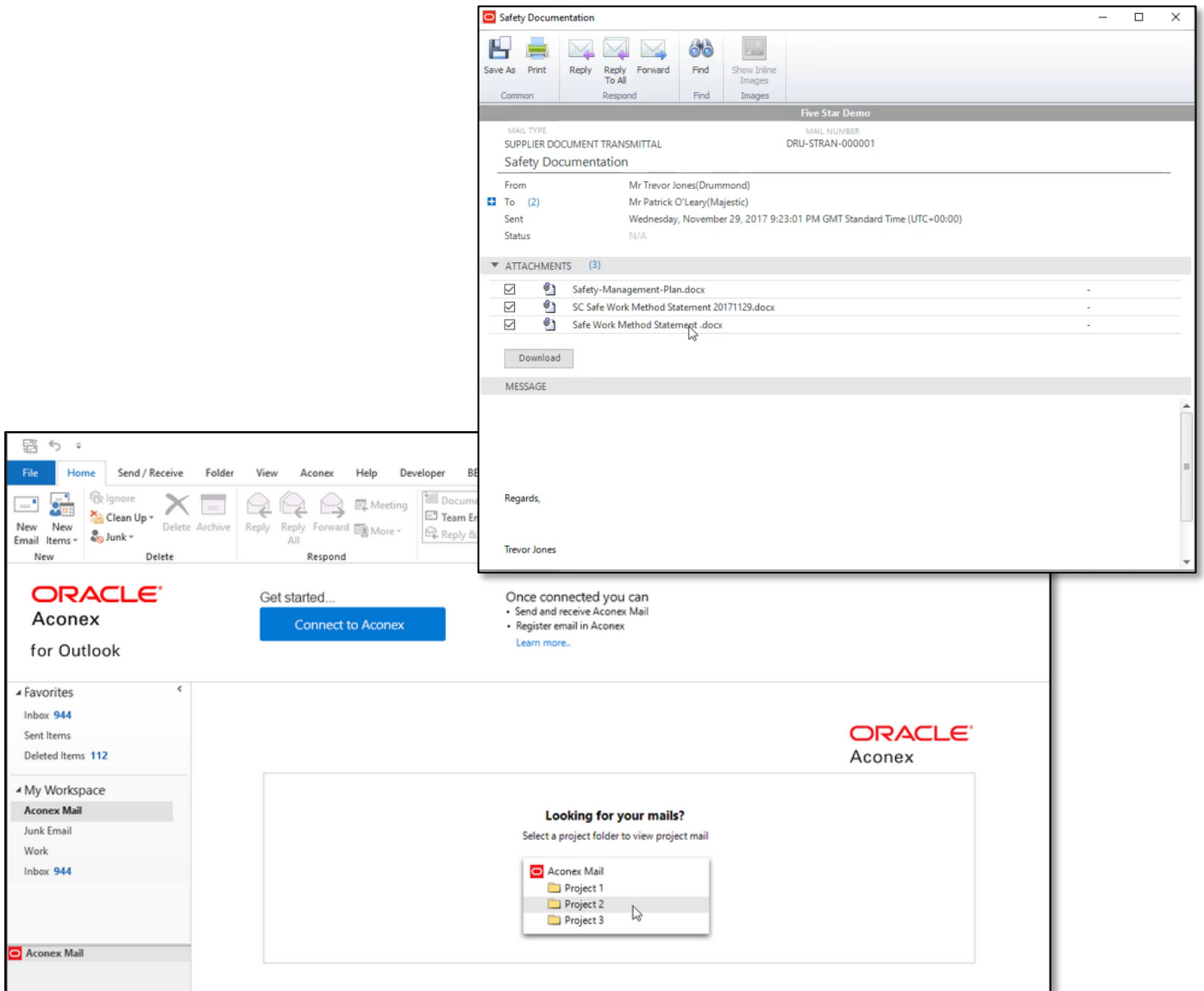
Each organisation can control the setup of their Oracle Aconex area via security settings and configuration:

- Organisation Logo / Organisation Name
- Trading Name
- ABN / Company Registration Number
- Postal Address / Delivery Address
- Contact Information

Oracle Aconex for Outlook

Oracle Aconex for Outlook is an Outlook plug-in that lets users manage all their Oracle Aconex mail from within Outlook, as well as take email from Outlook into Oracle Aconex individually or in bulk via drag and drop functionality.

Figure 34: Aconex plugin for Outlook.



Users can register standard Outlook emails as formal project correspondence in Oracle Aconex, maintaining full metadata, providing a complete audit trail for your projects. Oracle Aconex for Outlook will also enable Oracle Aconex mail to be drafted when offline and then sync back when connected.

BIM Integration

There are 2 versions of the Models module available in Oracle Aconex: Model Explore and Model Coordination.

- **Model Explore** allows your project team to upload models to the document register and view them in the model viewer (IFC or RVT file formats). Model Explore is included in the Oracle Aconex Cloud Service license.
- **Model Coordination** has all the features in Model Explore, and it also gives your project teams the ability to enrich the models by linking documents, raising processes (mail) and issues, adding measurements and creating/sharing viewpoints. It also gives you the ability to simplify the end-to-end issue coordination process; you can create and manage the flow of design issues on a single platform, work directly in your design tools through a live plugin integration (Revit, Navisworks and Solibri), monitor and control progress through a dashboard.

The rest of this chapter will describe the capabilities of Model Explore only, which is included in the Oracle Aconex Cloud Service. A description of the Model Coordination capabilities will be provided in [Chapter 11: Optional Modules](#).

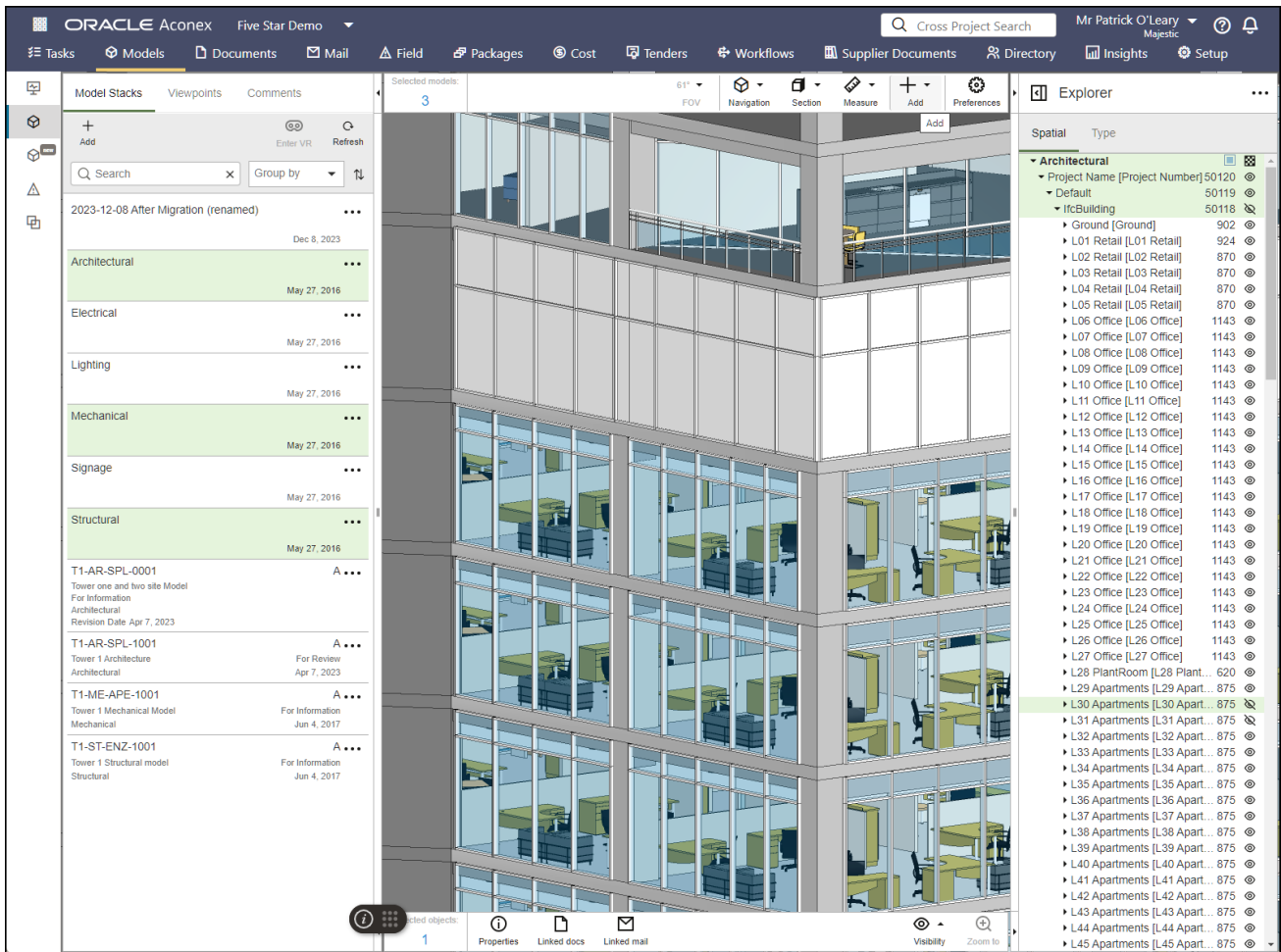
Table 1: Differences between Model Explore and Model Coordination

Model Explore (included in the Oracle Aconex Cloud Service)	Model Coordination (optional)
<p>View only</p> <ul style="list-style-type: none"> • A collaborative high-performance model viewer, fast and intuitive • Integrated with the Oracle Aconex Document Register 	<p>Advanced Navigation and Collaboration</p> <ul style="list-style-type: none"> • Project teams can seamlessly interact with model files (raise mail and issues) • Create and share viewpoints • Measure in the model <p>Comprehensive Issue & Clash management</p> <ul style="list-style-type: none"> • Plug-in integrations to authoring and QA tools • Seamless clash and design issue management • Dashboard to monitor progress and reporting

Working with Model Explore

Oracle Aconex allows construction projects to break down single models into smaller chunks (for example, one of our projects has split their Architectural model into 16 separate models). Clients can manage multiple models from different authors in one place. These can be merged or “federated” within Oracle Aconex Models. This is the Model Stack that forms the left-hand panel in the Models module.

Figure 35: Oracle Aconex model viewer.



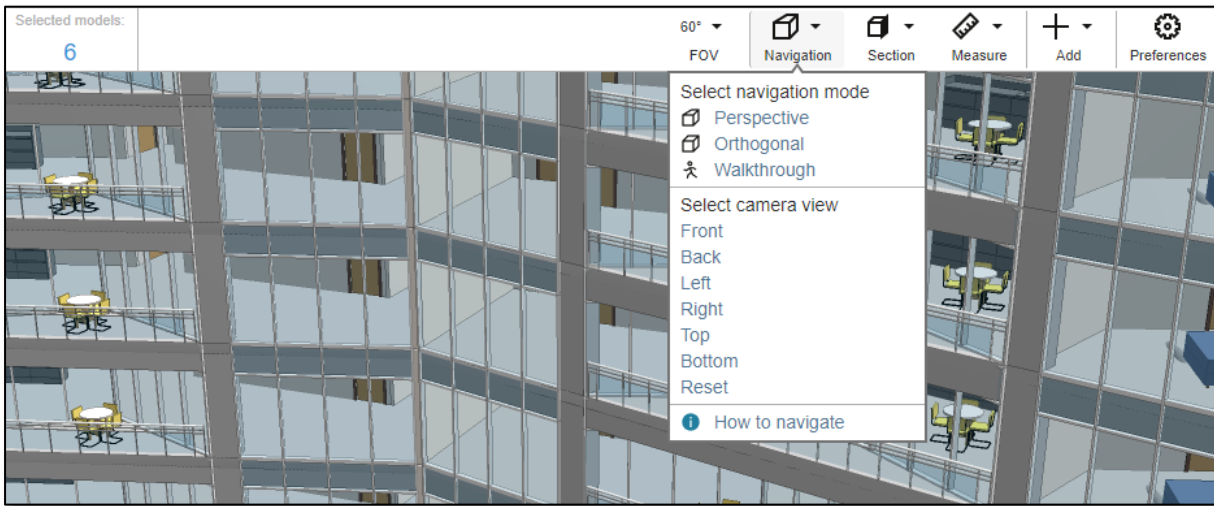
The Oracle Aconex model viewer provides users with the ability to view federated 3D models in the high-performance web-based viewer. They can load up a single model or multiple models and view them aggregated in the 3D web-viewer.

- Users can view extremely large data sets - at least 1.2GB in a browser with no installed software.
- Rapid opening – Less than 2s for a simple model to approximately 90 seconds for a model of 1.2GB, even over a WiFi hotspot.
- When rotating and zooming, the performance is smooth with no jerky movements.
- Simple navigation (it doesn't rely on complex authoring tool call-out navigation wheels)
- Object properties defined in the model authoring tool are visible in Oracle Aconex.

Users can navigate and inspect the model in 3 modes:

- The **Walkthrough Mode** will allow project participants to navigate models using the keyboard to move and the mouse to direct the line of sight.
- The **Perspective and Orthogonal modes** will allow project participants to navigate using a focal point that can be chosen by using the mouse to zoom in, pan, or rotate.

Figure 36: Navigation modes in the Oracle Aconex Model Viewer.



Another way to navigate within the federated model is to use the Oracle Aconex Object Explorer, which enables users to use a hierarchical tree structure to access the model objects by type or by their spatial location. Objects can also be hidden or made transparent.

A full list of the Model Explore functionalities can be found on [Oracle Aconex Support Central - Model Explore](#).

BIM Mobile App

The Oracle Aconex mobile app gives you access to your BIM models wherever you are and is available for iOS and Android tablets.

- View models
- View model details

Models are cached locally on the device and users can federate and view the combined models.

Field and Jobsite Mobility

The Oracle Aconex mobile app brings key functions to mobile phones and tablets. It's a free app which is available for iPhone, iPad, and Android phones and tablets.

There is one module in Oracle Aconex which would not exist without the Oracle Aconex mobile app: Oracle Aconex Field. Indeed, the Oracle Aconex Field module supports the management of issues, punch lists and inspections created from the construction site.

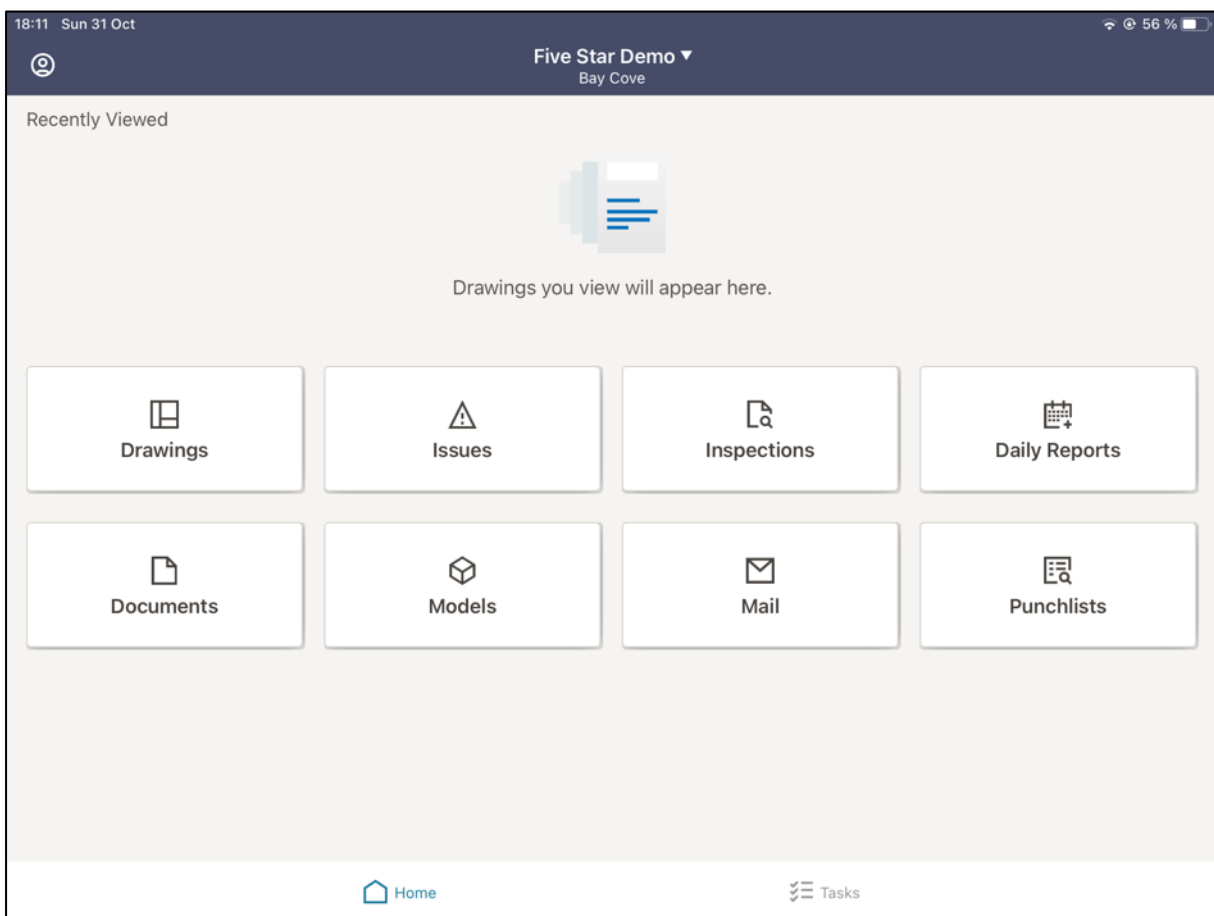
Oracle Aconex Mobile App

The Oracle Aconex Mobile app enable users to create and access their project information via their mobile devices, all via secure HTTPS connection, letting them work away from their desk or in the field. Importantly, it also offers a range of features that are only possible with a mobile device, such as capturing information on site and notifying others instantly (issues, taking pictures, etc...).

The Oracle Aconex Mobile app gives the entire project community the flexibility of working on the go either online or offline without an internet connection:

- View tasks, mail, documents, drawings and models
- Create or respond to mail, and save it to drafts and send when back online
- Add markups/annotations to documents
- Access mail and documents that you have recently searched, so long as you have caching turned on
- View and create issues, punch lists and inspections (Oracle Aconex Field)

Figure 37: The Oracle Aconex mobile app.



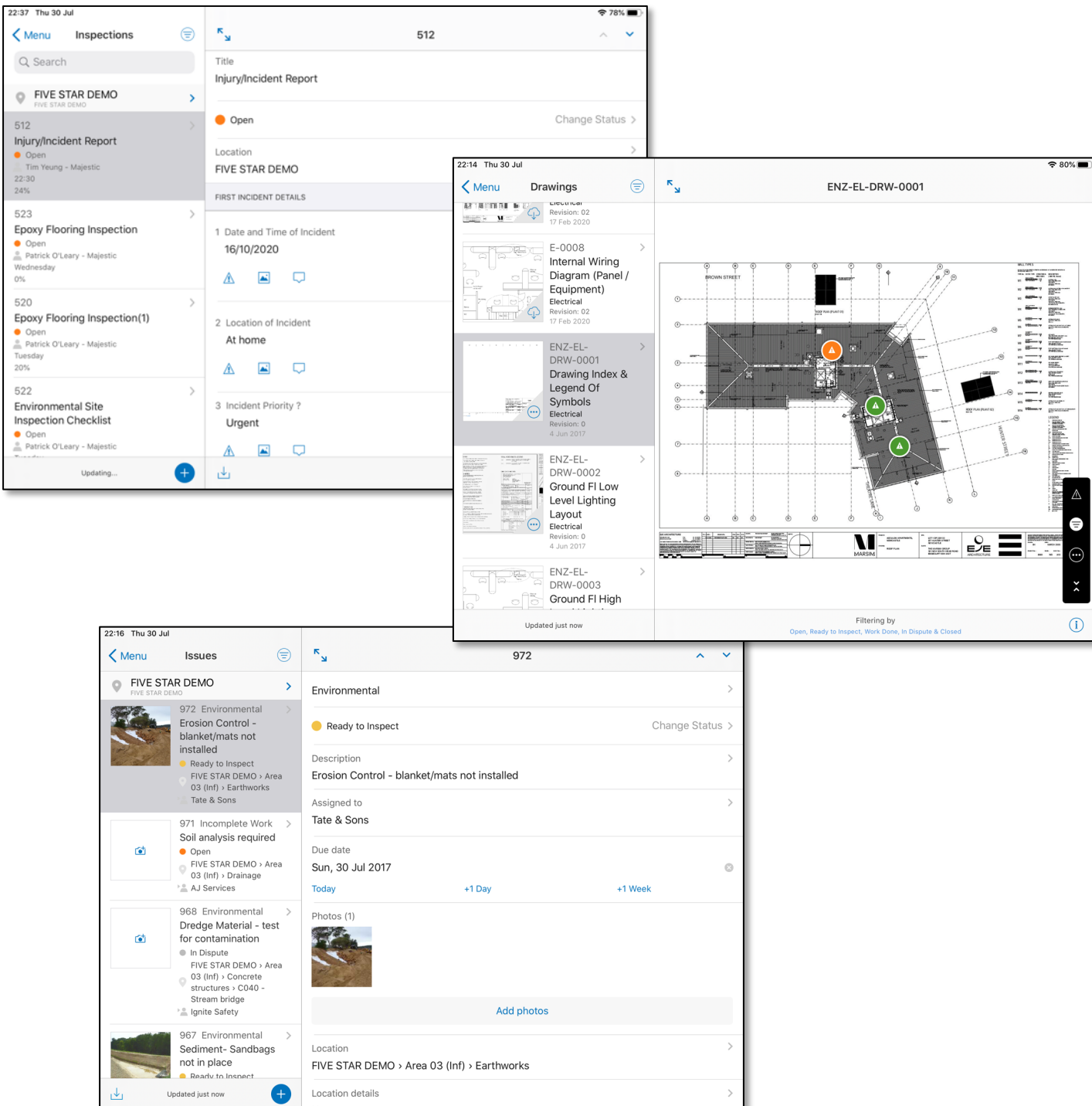
Oracle Aconex Field Management

Oracle Aconex Field is a cloud-based issue and inspection solution that transforms the site inspection process. It captures, distributes, and tracks quality, safety, and other issue/ inspection data in real time.

Oracle Aconex Field makes it easier to resolve defects on large, complex projects. It is composed of an easy-to-use mobile application (the Oracle Aconex mobile app) connected to the web-based Oracle Aconex CDE, which guarantees a single source truth for your construction projects. Oracle Aconex Field transforms safety walks, site inspections and issues management.

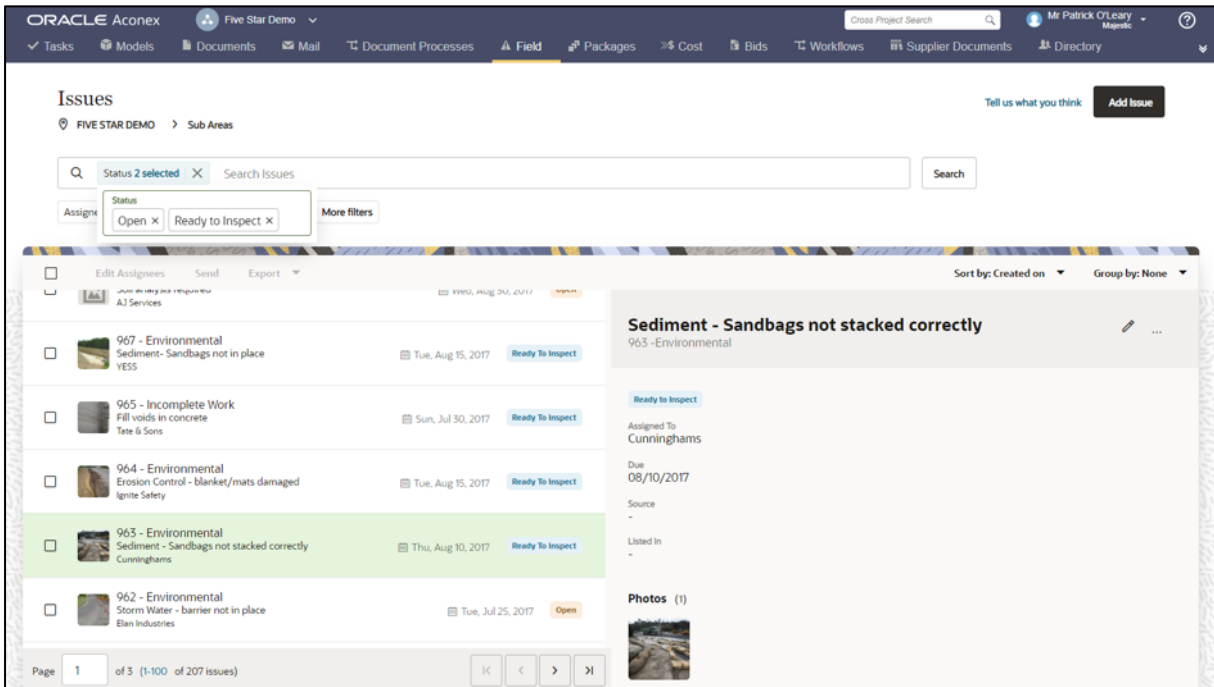
Subcontractors and other participants can access Oracle Aconex via the mobile app for an always up-to-date view of issues they're responsible for, and to notify when works are ready to inspect.

Figure 38: Collaborating on drawings, issues and inspections in the Aconex mobile app.



Construction managers may prefer to access all issues, punch lists and inspection on the web interface to assign them to the relevant teams for resolution, to monitor and control the progress, and to report on them.

Figure 39: Issues in Oracle Aconex field (web interface)

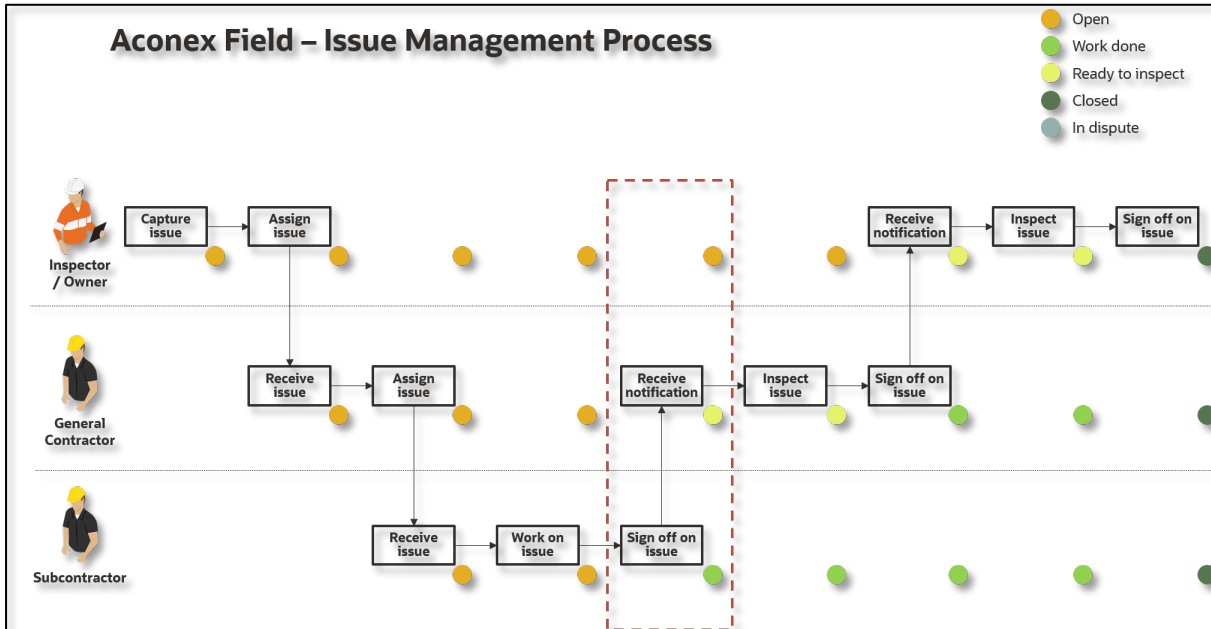


Oracle Aconex Field’s powerful features facilitate faster project completion through:

- **Inspection and Issue Capture** – Explore project locations and capture inspection data fast. Attach and markup photos to remove uncertainty about what needs to be fixed. Pin issues to a plan for simpler issue monitoring. Assign to organisations from the Oracle Aconex project directory and set due dates to indicate when issues need to be fixed.
- **Manage Punch lists** – Group related issues so you can capture, manage, share and track them from one single view. Punch lists allow you to manage a group of related issues, which can be shared across different organizations. Issues can be created directly in the punch list, or existing issues can be listed in them. Keep track by viewing the completion percentage for each punch list.
- **Checklist Based Inspections** – Perform complex inspections with groups of predefined items to be checked. Raise issues from failed items and manage them with the Field issue workflow. Attach photos to further document and enhance the site inspection report.
- **Re- inspection and Close Out** – Re-inspect the job site and close out issues with ease. Accept or reject issues that are ready to inspect. Edit issues to clarify what needs to be fixed and by when, to reassign, or replace attached photos. Walk the site with a subcontractor using issue list filter and sort options.
- **Checklist Template Library** – Create and manage checklist templates to conduct quality, safety and other inspections exactly as required. Fully customisable, the shared library of checklist templates supports standardisation of inspections across individuals and the wider project team.
- **Collaborative Inspections** – Subcontractors and other participants also access the system for an always up-to-date view of issues they’re responsible for, and to notify when works are ready to inspect. Invite other organisations to use Oracle Aconex Field to conduct their own site inspections.
- **Scan location** – Scan a location with the in-built QR code scanner to begin an inspection or re-inspection, or to view issues for a given location.

- **Analysis and reporting** – High level metrics provide reporting on project issues and areas. Information can be quickly reported up to owners, bottlenecks identified, and underperforming trades managed to help ensure that project schedules are met.
- **Work Offline** – Carry out building inspections even in areas of poor connectivity, or where no connection is available. Data is automatically synced to the server when a connection is found.

Figure 40: The issue management process in Oracle Aconex Field - the status of an issue can be different depending on the organisation you belong to (i.e., work done/ready to inspect/open).



Procurement/Tender Management

Oracle Aconex is a secure, central platform to manage client’s procurement activity. Developed with industry input and experience, it’s easy to use for both issuers and recipients. The Tenders module confidentially manages the bid process electronically, including tender package distribution, addenda, requests for information and clarifications. Issuers can invite bidders to their secured bid space whether the bidders are Oracle Aconex users or non-Oracle Aconex users.

Figure 41: Views of the Tenders Module.

Tender No	Title	Version	Initiator Organization	Initiator Contact	Open Date	Closing Date	Days Left	Status
VIP-FO-0001	Internal Fit Out Package - Lift Lobby - All Floors	3	Majestic	Patrick O'Leary, Tim Yeung	11/12/15 5:49 AM	7/04/16 6:30 AM	0	Closed
VIP-FS-0001	Fire Services Packages	1	Majestic	Patrick O'Leary, Tim Yeung	11/12/15 5:43 AM	21/04/16 2:30 AM	0	Closed
VIP-ELE-0001	Electric Works Package	2	Majestic	Patrick O'Leary, Tim Yeung	11/12/15 1:13 AM	29/04/16 2:00 AM	0	Closed
VIP-COM-1001	Communications Package	1	Majestic	Patrick O'Leary, Tim Yeung	8/03/16 12:31 AM	27/05/16 9:15 AM	0	Closed
VIP-FS-0002	FS Package - Area 01	1	Majestic	Patrick O'Leary, Tim Yeung	13/07/17 4:26 PM	15/08/17 5:00 PM	0	Closed
RFP-Infrastructure	Infrastructure Work Package	3	Majestic	Abdul Halim, Patrick O'Leary	17/02/20 9:25 PM	5/03/20 9:00 AM	0	Closed
Tndrs-10234	QS VR	1	Majestic	Patrick O'Leary	29/07/20 7:17 PM	30/07/20 12:15 AM	0	Closed
000010	Bid 000010	2	Majestic	Abdul Halim	30/07/20 2:28 AM	30/07/20 8:00 PM	0	Closed
000011	Bid 000011	1	Majestic	Patrick O'Leary	30/07/20 2:36 AM	30/07/20 8:00 PM	0	Cancelled
000012	Bid 000012	2	Majestic	Patrick O'Leary	30/07/20 2:40 AM	1/08/20 12:00 PM	1	Open

VIP-FO-0001 - Internal Fit Out Package - Lift Lobby - All Floors

Closing: 07/04/2016 6:30:00 AM AEST (GMT +10:00)

Actions: Create RFI, Create Addendum

Recipients	Add Recipients	Send	Sent Date	Viewed Date
Conglomo Corporation (Organization Status: Submitted)				
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Maurice Jenner - Conglomo Corporation	11/12/2015	01/02/2016
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Miles McBucket - Conglomo Corporation	11/12/2015	
Connery (Organization Status: Declined)				
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Sean Connery - Connery	11/12/2015	22/02/2016
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Theresa Connery - Connery	11/12/2015	
Eastern Tiling (Organization Status: Sent)				
<input type="checkbox"/>	<input checked="" type="checkbox"/>	John Voight - Eastern Tiling (blackhole@aconex.com)	11/12/2015	
EA Construction (Organization Status: Sent)				
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Edgar Alberto - EA Construction (blackhole@aconex.com)	11/12/2015	
Decadence (Organization Status: Submitted)				

The Tenders Module features include:

1. Easy and intuitive tender form to capture bid information to be sent to recipients
2. Various features allow for flexibility including the ability to:
3. Set closing date and time
4. Set a Lock Box functionality that restricts access to tender responses until closing date and time has passed
5. Send bid invitations to both full Oracle Aconex users as well as Guests users
6. Enter a covering letter that outlines that tender scope, requirements etc.
7. Attach documents in any file format that your recipients will be able to view and download
8. Easy distribution of addendums to all recipients

- a. Ability to update the closing date and time, initiator contact, cover and documents via an addendum
- b. Email notification of RFIs generated by recipients that provide direct hyperlinks to the mail in the tender
- c. All addenda issued are listed individually within the tender
- d. The invitation is updated each time an addendum is generated ensuring that the most updated information is always visible
- e. All Tenders RFIs raised are stored within the tender module ensuring all this information is in one place
- f. Email notification of tender response by recipient sent to initiator contact/s that provides a direct hyperlink to the response in the tender.

Dashboards and Reporting

Oracle Aconex provides several ways to report on project information and activity:

- **Search-based reporting** – Allows Project Administrators or Document Controllers to run reports inside each module.
- **Oracle Aconex Reports module** – Allows users to access standard reports (tabular and graphic) and to build their own custom reports by selecting the data to report on (columns, filters, etc...), and defining the layout to display the information (pixel-perfect reports aligned with your organisation’s graphic charter using the Oracle BI Publisher plugin for Microsoft Office).
- **Process Insights Dashboards** – Allows users to monitor cross-project progress at a glance. Key processes are easily configured to organisational standards to provide intuitive and actionable data visualisations that will assist users to manage risk, monitor quality and keep the project on track.

Search-based Reporting

Oracle Aconex provides powerful search capability in the various modules that gives users the ability to run ad hoc reports with the most up-to-date project information. These searches can be saved to allow one click access to information required on a frequent basis. The search results can also be exported to Excel format.

Moreover, standard reports are available in some modules like Documents and Workflows. Report examples include ‘Transmittal History by Document’, ‘Transmittal History by Organization’, ‘Doc Review Status’ and ‘Workflow Review Status’.

Figure 42: Search in the workflow module

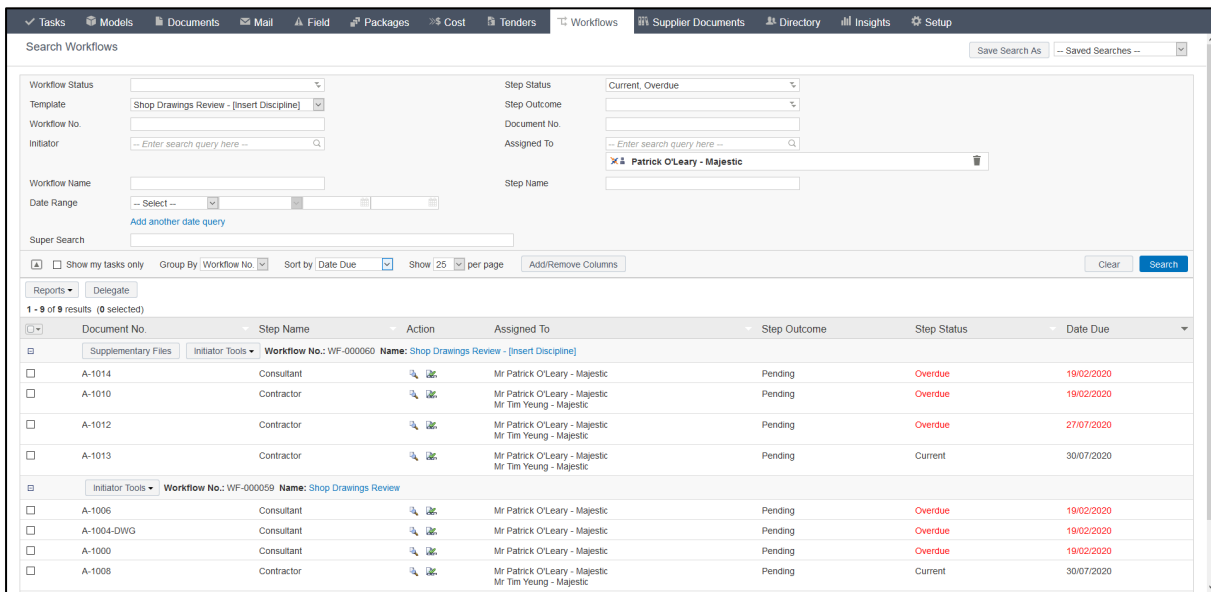
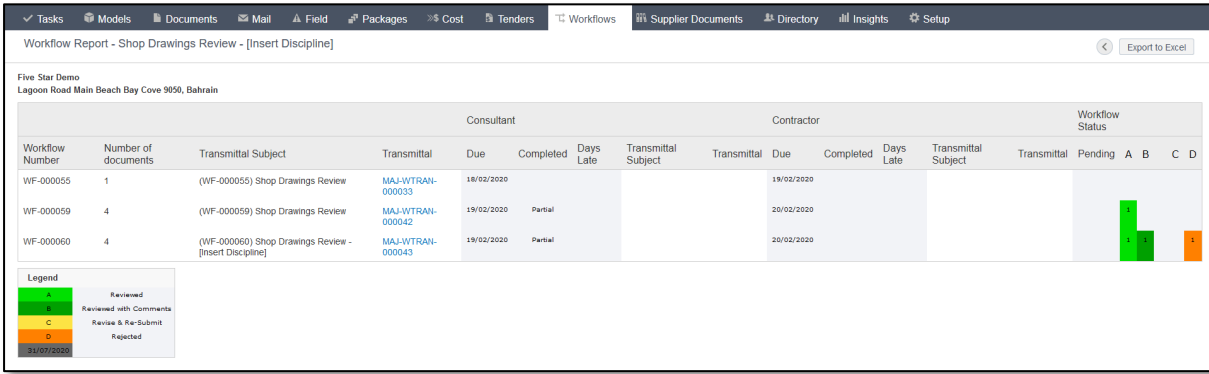


Figure 43: Standard workflow review status report applied to the 'Shop Drawings Review' workflow.



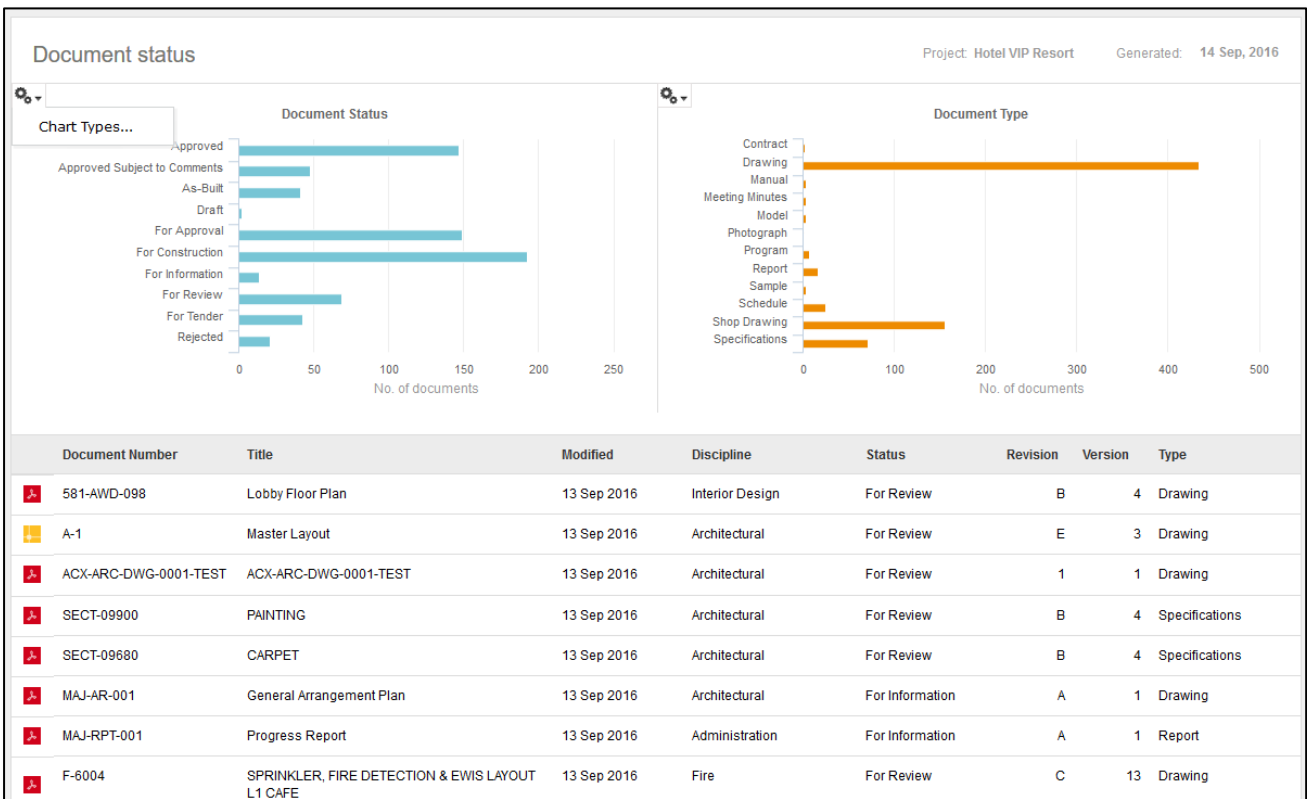
Oracle Aconex Reports Module

The Reports Module lets you run preconfigured reports on many of the common processes in Oracle Aconex. Indeed, Oracle Aconex Reports contains a collection of predefined reports that make reporting on the status of RFIs, Workflows, etc. easier. All metadata populated against documents and transmissions can be compiled and reported on.

You can do the following with the standard reports:

- View data in either graphical or tabular format
- Apply filters and save the changes as defaults
- Share reports with others by exporting them as PDF, CSV or XLSX files.

Figure 44: Standard document status report



Moreover, Oracle Aconex Reports enable you to define your own custom reports in 3 steps:

1. **Define a Data Model** to select the data to report on. For this, you'll use the Data Model Editor.

2. **Design a Layout** to decide how to represent the data visually. Layouts are created either in your browser using the online editor, or offline using the Oracle BI Publisher plugin for Microsoft Office, enabling you to create pixel-perfect reports aligned with your organisation's graphic charter.
3. **View and Share** your report.

Once you have customised a report, you can save the configuration for future reference. The data refreshes each time the report is opened, so you'll always have access to the latest information, the way you want it.

Main Project Settings

Project Administrators are responsible for setting up and managing how projects are run in Oracle Aconex. Project Administrators work for the project-owning organization and can make changes to project-wide settings. These settings apply to all organizations working on their project.

A detailed list of all project settings can be found online [here](#).

Roles and Permissions

Oracle Aconex has been designed to work for multiple organisations working on projects, with internal project teams (within each organisation) having access to that organisation’s data except, of course, documents and mail marked as confidential.

Within the Oracle Aconex application, user access and permissions are managed by each organisation for their own users. This decentralisation of user administration balances the admin workload between all participating organisations and removes any dependency on one single organisation (you, the project-owning organisation).

However, as the project administrator, you still decide what mail types, document types and document statuses each organisation will be able to access. And you also control when an organisation should be moved to a Read-only or Archive status. Project Admins can also create groups that contain people from different organisations and assign them a project role that will complement the permissions granted by their organisation administrator.

For each asset/function in Oracle Aconex, the admin will select one of the 3 permissions below:

- **Grant** – Gives permission to this function.
- **Deny** – Prevents access to this function. This setting cannot be overridden by a project-level user role. Also, if a user has several roles, and Deny is set for one of them, that will prevent them from using the functionality even if it's enabled for another role that's applied to them. In most cases, we recommend using N/A instead.
- **N/A** – N/A can be overridden by another user role. N/A is assigned by default. And by default, N/A does not grant permission to the function, so it can be considered 'not assigned'.

Figure 45: List of user role permissions defined by the organization or project administrator.

Function	1 - Discipline Engr.	2 - PEM	2b - Area Manager	3 - DCC	3b - Site DCC	4 - Super User	5 - Org Admin	API User	Cost	Outlook Plugin	Tender Module
Administration											
Create a new user	N/A	N/A	N/A	N/A	N/A	N/A	Grant	N/A	N/A	N/A	N/A
Edit all users information	N/A	N/A	N/A	N/A	N/A	N/A	Grant	N/A	N/A	N/A	N/A
Edit organization information	N/A	N/A	N/A	N/A	N/A	N/A	Grant	N/A	N/A	N/A	N/A
Assign user roles	N/A	N/A	N/A	N/A	N/A	Grant	Grant	N/A	N/A	N/A	N/A
Configure user roles	N/A	N/A	N/A	N/A	N/A	N/A	Grant	N/A	N/A	N/A	N/A
User Account											
General											
Edit own user information	Grant	Grant	Grant	Grant	Grant	Grant	Grant	N/A	N/A	N/A	N/A
Edit user level session time duration	Grant	Grant	Grant	Grant	Grant	Grant	Grant	Grant	N/A	N/A	N/A
Configure user notification type	Grant	Grant	Grant	Grant	Grant	Grant	Grant	N/A	N/A	N/A	N/A
Configure user notification attachments size limit	N/A	N/A	N/A	N/A	N/A	Grant	Grant	N/A	N/A	N/A	N/A
Create a guest user	N/A	N/A	N/A	Grant	N/A	Grant	Grant	N/A	N/A	N/A	N/A
Access via Mobile Apps	Grant	Grant	Grant	Grant	Grant	Grant	Grant	Grant	N/A	Grant	N/A
Access via Web Services API	N/A	N/A	N/A	N/A	N/A	Grant	N/A	Grant	N/A	Grant	N/A

Figure 46: List of user role assignments for your organization.

The screenshot shows the Oracle Aconex 'User Role Assignment' interface. It includes a search bar for 'Cross Project Search' and a user profile for 'Mr Patrick O'Leary Majestic'. The main area is titled 'User Role Assignment' and has tabs for 'Create Role' and 'User Role Configuration'. Below this, there are input fields for 'Given Name' and 'Family Name', and a 'Show disabled accounts' checkbox. A table lists 25 users with columns for various roles: 1 - Discipline Engr., 2 - PEM, 2b - Area Manager, 3 - DCC, 3b - Site DCC, 4 - Super User, 5 - Org Admin, API User, Cost, Outlook Plugin, and Tender Module. Checkmarks in the table indicate which roles are assigned to each user.

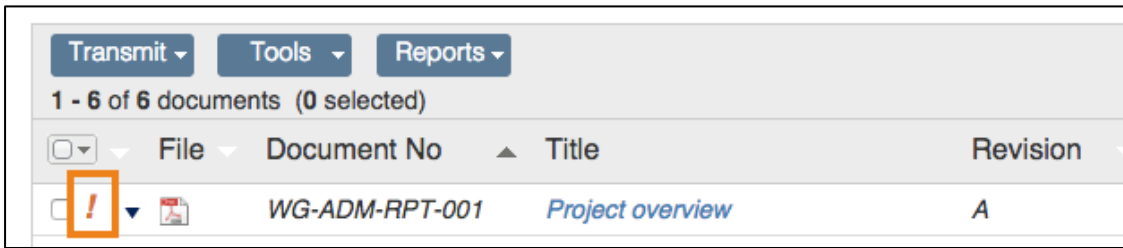
Users	1 - Discipline Engr.	2 - PEM	2b - Area Manager	3 - DCC	3b - Site DCC	4 - Super User	5 - Org Admin	API User	Cost	Outlook Plugin	Tender Module
Aaron Freitas	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Abdul Halim	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Bhavya Jadeja	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bid Aconex	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Brian Brown	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
David Humphrey	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Document Controller	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Ho Tran	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
James Wong	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Joe Costa	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kenneth McDonald	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Kim Nga	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Marie Duval	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Melissa Leung	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Document Restrictions

Oracle Aconex ensures that organisations have access to their information through the logical separation of data. Each organisation has control over the information they upload and transmit via the system. The Oracle Aconex platform is neutral meaning users can only see information within their own organisations or information which has been shared with them.

Documents and Mail within Oracle Aconex can be marked as confidential effectively controlling who has access to see it. A confidential document will be marked with by a ! making it easily identifiable by the user.

Figure 47: Example of a confidential document in Oracle Aconex.



Confidential documents and mail will not be returned in a user's search results unless it has been shared with them or they are the originator of the document or mail.

Optional Modules

Model Coordination

Through the association of the federated 3D model, documents and correspondence, Oracle Aconex's Model management capabilities provides a complete BIM process management solution, integrated directly with the main Oracle Aconex platform. The Oracle Aconex BIM platform allows the entire project community to share, mark-up, review and contribute to BIM, all from within a web browser without the need to install additional software. Oracle Aconex allows clients, architects, engineers, contractors and subcontractors to benefit in using a powerful BIM collaboration.

Oracle Aconex Models enhances the way your organisation plans and constructs its capital projects providing a complete set of linked handover information without the need for a specialised system. Our platform assists clients in meeting compliance obligations with industry standards. Oracle Aconex Model Coordination supports IFC and BCF which are formats used as an industry standard.

Oracle Aconex Models ensures clients can effectively manage their projects and provide structure to ensure consistency when communicating with projects users, whilst capturing a reliable audit trail.

Oracle Aconex assists you to improve efficiency, reduce risk, cut cycle times, and deliver higher-quality built assets. Adopting our platform addresses the issue of dealing with a large number of contributors across a large number of projects simultaneously.

Oracle Aconex Models and Model Coordination assists in:

- Controlling access to models through user role settings
- Speeding up decision making by extending access to the latest models, related documents and decision history
- Enabling model authors to upload models from Revit or their preferred design software
- Allowing users to upload and merge models of any size as. Users can view even gigabyte data sets from a range of authoring tools.
- Allowing users to raise an RFI or design query from within the model they are viewing, sending the recipient to that exact location for quick resolution
- Providing 'walk through' capability including gravity and object collision features. Models also allows for sectioning of the model
- Keeping all asset information together on one integrated platform, linking Oracle Aconex documents to specific model objects, to help in construction, auditing and handover.
- Providing a full audit trail with all communications remaining right inside the model so there is a full picture of who made what decision and when
- Controlling model objects with versions to allowing your organisation to quickly see what's changed and be confident that teams are working off the latest information.

Oracle Aconex can assist with geographical issues when managing projects with our dedicated mobile app, improving communication and understanding on-site by viewing models in the field.

Linked Mail

The object properties tool gives users the information they need about objects in the model. These properties can be anything from size to material to where it is located, what project it belongs to and more. This is great for design and construction co-ordination for people who raise RFIs and need to identify elements they are concerned about.

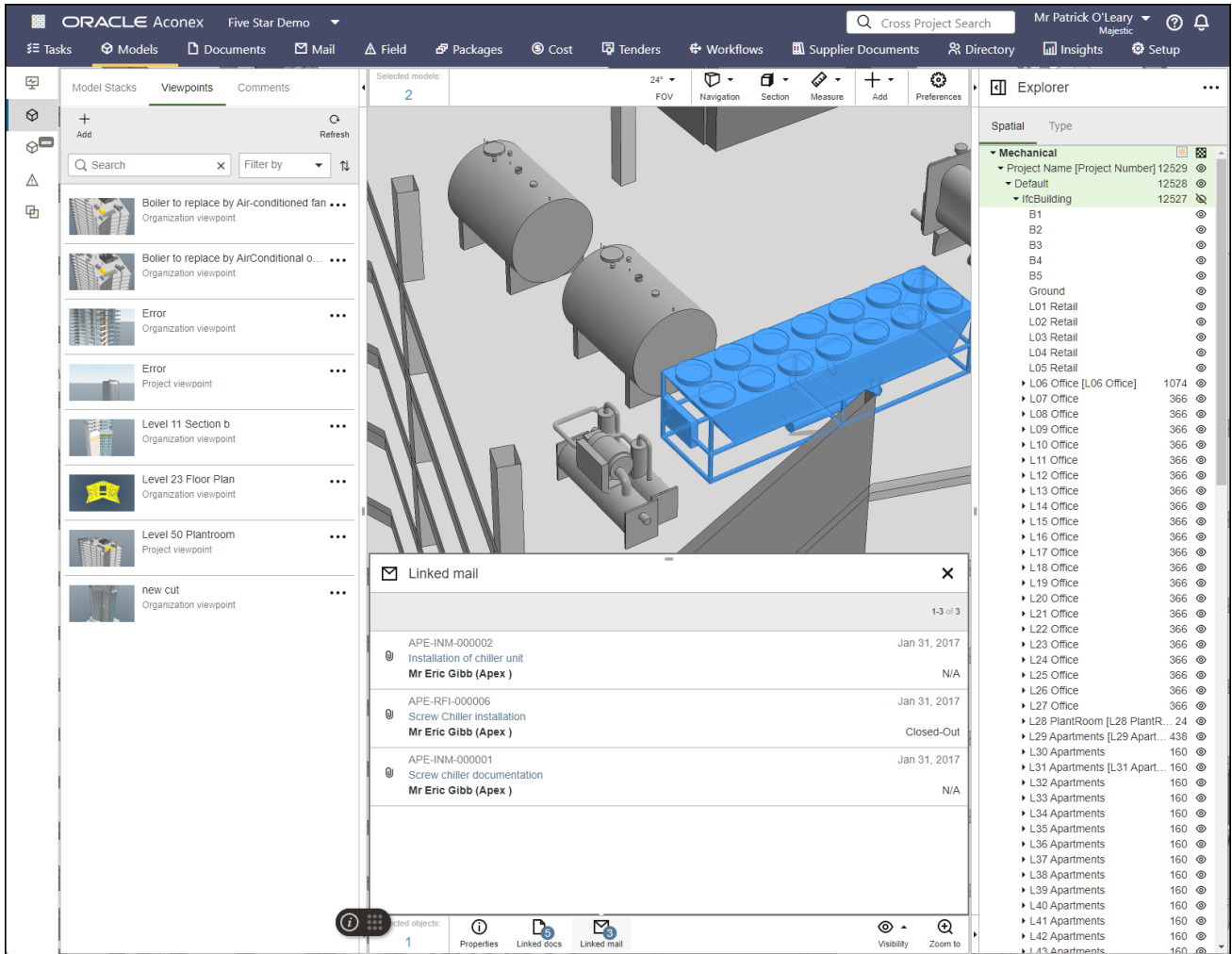


Figure 48: Linked mail feature.

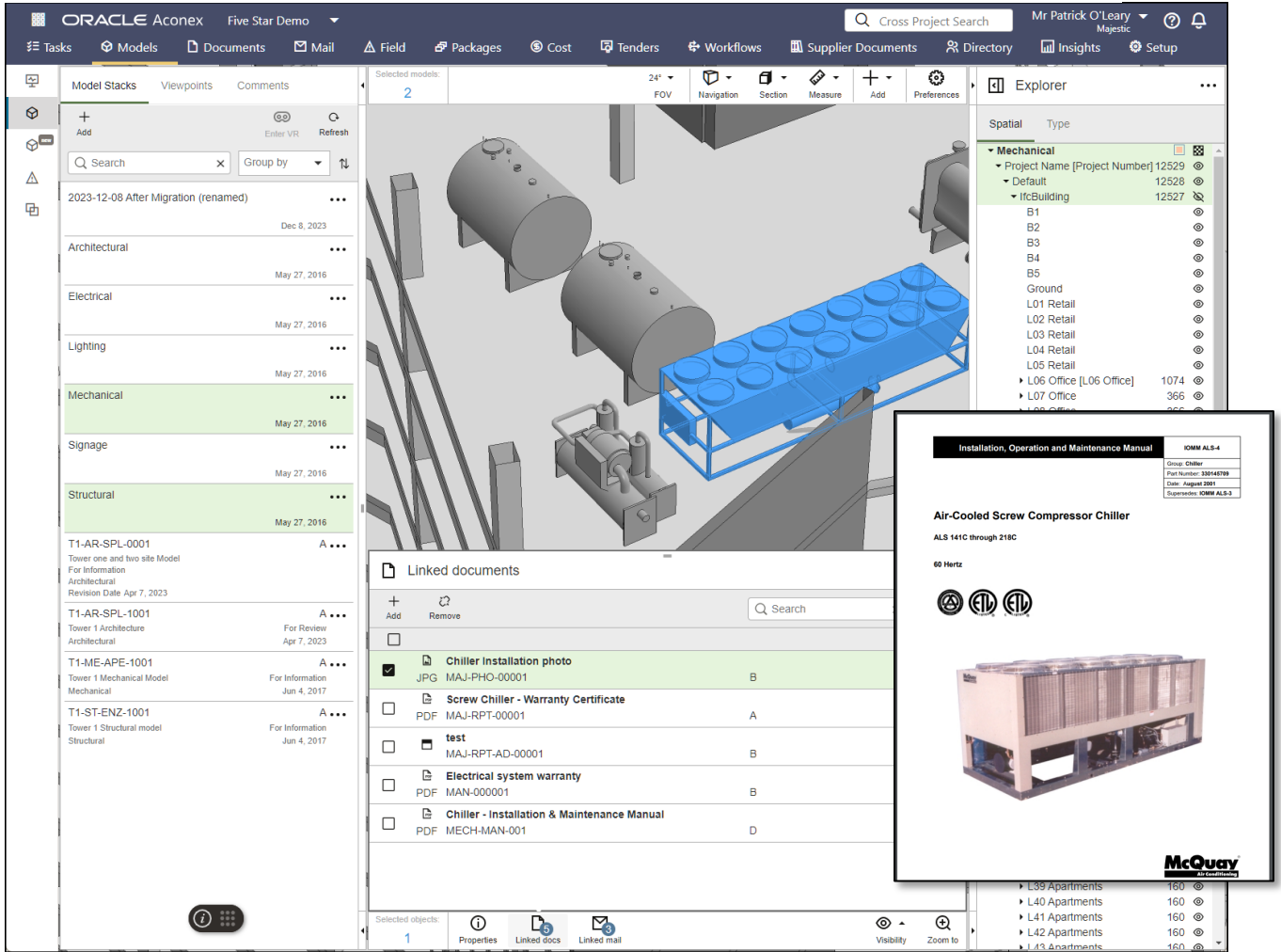
When navigating the model, a user can raise a design query, RFI or any other mail form from right inside the model. Importantly, the resulting mail has all the context that the sender had (including a link to the viewpoint inside the model, a mark-up image and a link to the object or objects in question). This means that the recipient has all the information at their fingertips to make an informed and fast response. They can click on the viewpoint link and be taken directly into the BIM module, and the relevant models are then automatically merged together, with any visibility setting applied and zoomed to exactly the same viewpoint as the sender when they created the mail.

This linked information is available for anyone viewing the model later, providing a full view of the design decision history. This feature can be used by anyone in the project team to raise issues and get responses. It could be a clash for resolution, or even an instruction to change or move an object. As Oracle Aconex Mail forms help people track and resolve issues, it makes it a powerful tool for managing projects.

Linked Documents

Users can select objects in the model and link documents to them. Not only does this help with construction (for example, the contractors commissioning equipment can access the installation and maintenance manuals), but also this provides project owners with a rich and easily navigable set of asset documentation.

Figure 49: Linked documents.



Model Coordination (issues, issue sets and issue dashboard)

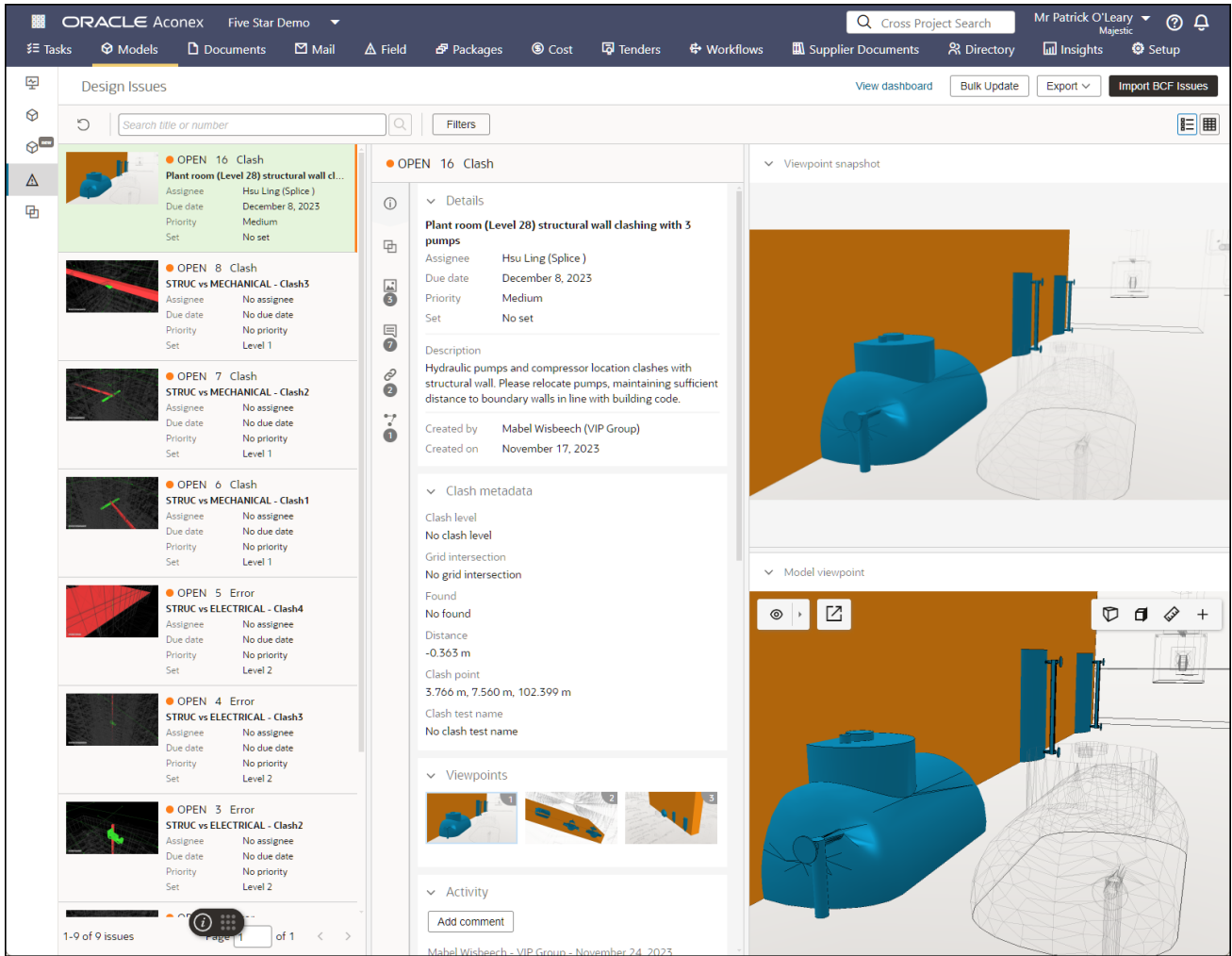
Issues

Issues is a conflict resolution tool in Model Coordination that allows project participants to identify issues in the Oracle Aconex CDE and assign them to the responsible stakeholders. Issues can be classified in five types based on their BCF format: Clashes, Errors, Information, Warnings and Other.

Project participants can create Issues on the Oracle Aconex CDE, clash detections tool or any integrated authoring tool.

An Issue can be assigned to a project participant with a due data, raised in project mail, shared on an Issue Set to a wider team, capture multiple viewpoints, maintain comments across participants, track progress and manage priority. More information can be found about Issues in Support Central.

Figure 50: Issue on model coordination.



Issue Sets

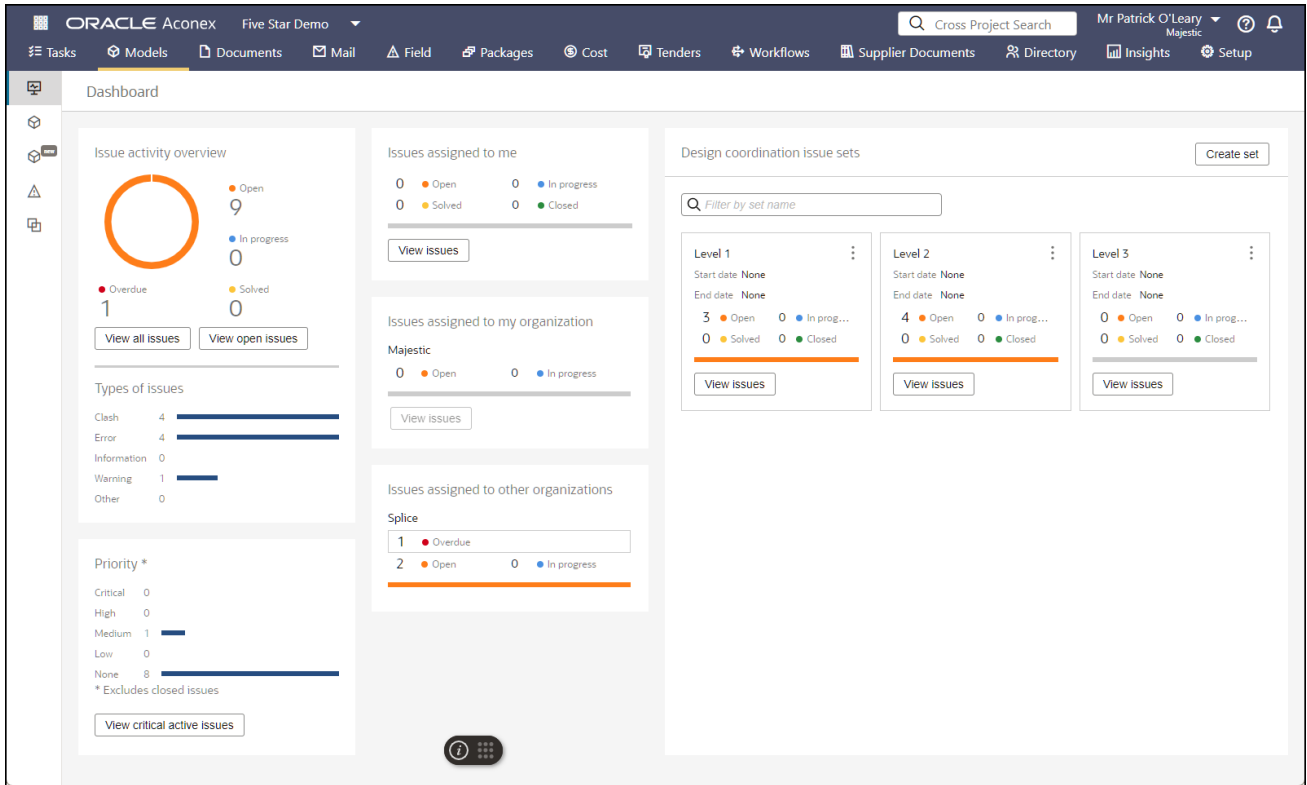
Issue Sets are used to manage the design issue process in Model Coordination. The information contained in a set must be agreed by the project team as a defined subset of the coordination process. A set includes the project participant, start and end dates for actioning the work, and all relating issues that need to be managed.

A project can create as many sets as needed, though it is recommended to have a discussion to understand how the collaboration and coordination is structured and what workflows are in place for the project. Sets will display an overview of all the issues contained. Sets can have three types of participants; Owner (Create and Close all issues in a set), Contributor (Creates issues) and Viewer (can only see issues).

Issues Dashboard

The Oracle Aconex Model Coordination Dashboard allows project participants to have an overview of all issue activities either created, shared or assigned to their organisation. With preconfigure summary views, the Dashboard can provide a direct understanding of the progress of issues managed by the project team. The Dashboard also provides the tools to manage the creation and administration of the Issue Set.

Figure 51: Issues Dashboard



Issue Management Process

Figure 52: Challenge - manual coordination between siloed applications

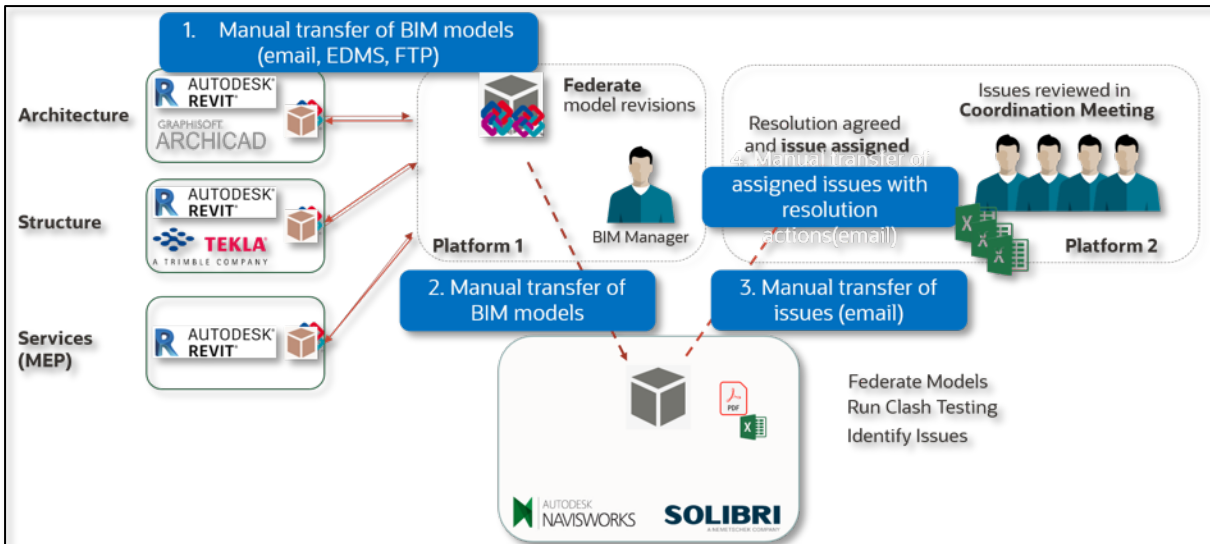
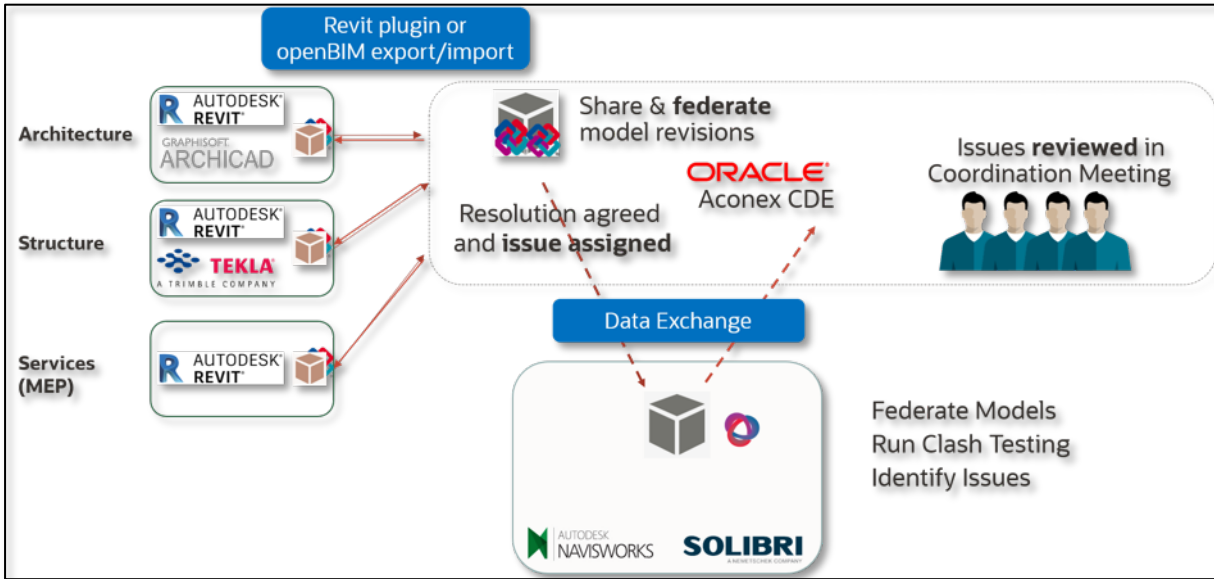
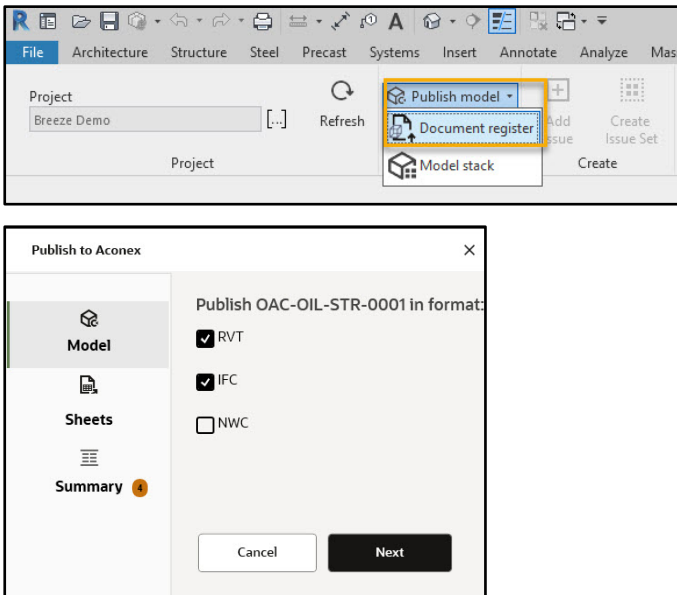


Figure 53: Solution - a common data environment for model coordination



To help manage the end-to-end issue management process for BIM (see diagrams above), Oracle Aconex has developed plugins/integrations with authoring tools (Revit) and Quality Assurance tools (Navisworks and Solibri).

Figure 54: Examples of plug-ins within Oracle Aconex



Plugins are used with Oracle Aconex for one of two reasons:

- Find issues and upload them to Oracle Aconex – this is done in Navisworks and Solibri (and Oracle Aconex)
- Fix issues found in Oracle Aconex based models or other plugins – carried out in Revit

The follow scenarios show examples of the basic workflow.

An issue is created in Oracle Aconex:

- This is then reviewed in either Navisworks or Solibri.
- The issue is assigned in Navisworks or Solibri (this is an optional step).
- The review data is uploaded to Oracle Aconex.
- The issue data from Navisworks or Solibri are assigned to a specific Revit user. This assumes the issue wasn't assigned in either Navisworks or Solibri.

- The Revit user reviews and fixes the issue.
- The fix data is uploaded to Oracle Aconex as a model revision, where it is reviewed and, if accepted, closed as an issue.

An issue is created in Navisworks or Solibri:

- The issue is assigned to a Revit user.
- The Revit user reviews and fixes the issue.
- The fix data is uploaded to Oracle Aconex, as a model revision, where it is reviewed and, if accepted, closed as an issue.

Cost Management

Although there can be several challenges associated with poor project cost control, typically we see them falling into 3 broad categories indicative of older, legacy technology and spreadsheets (the most common way to manage project controls):

- **Siloed information:** I no longer want my teams to have to chase information across organizations and applications, it slows down the discovery of issues that can drive up costs and delay schedules
- **Manual updates:** Help me escape spreadsheets! They introduce errors and duplication that can jeopardize both data integrity and version control. And my job.
- **Poor visibility:** Why am I constantly being blindsided due to a lack of accurate, real-time information? I need to measure and report performance against budget in a meaningful and proactive way.

The objective of the Oracle Aconex Cost module is twofold:

- **Simplify reporting** that used to take hours by integrating budget, schedule, contract and actual cost data in a single collaborative platform.
- **Simplify the management of contracts** by connecting teams together to control contract changes and handle payment certifications, providing a single source of truth for the contracts between the contracting organisations.

Oracle Aconex Cost is a flexible and highly customisable cost management solution which combines cost, schedule, commitments, and other vital data to bring greater accuracy and clarity to the progress and performance of your projects. It consists of 4 views:

- **Cost Management:** This view provides a comprehensive set of tools for managing budgets and contracts, monitoring and reporting on progress, generating forecasts and analyzing performance. The performance on a project or portfolio is then measured at regular intervals using standard Earned Value methodologies which are based upon the progressing of control accounts, contracts, documenting or importing actuals, documenting or importing commitments and calculating forecasts.
- **Cost Activity Streams:** This is the audit trail of actions being performed in Oracle Aconex Connected Cost; it tracks the actions performed in real-time by all users.
- **Cost Reports:** This is where project and organization level reports and graphs are created.
- **Cost Administration:** This is where you can create users and define their permissions, define standard organization settings and definitions, and define project-specific settings and definitions.

Figure 55: Oracle Aconex Cost Module

Code	Name	Baseline Budget	Approved Budget Changes	Approved Budget Transfers	Approved Budget	Potential Budget Changes	Potential Budget Transfers	Potential
55	5 Star	\$70,000,000.00	\$25,000.00	\$0.00	\$70,025,000.00	\$5,000.00	\$0.00	\$75,025,000.00
55.01	Site Preparation Works	\$1,400,000.00	\$25,000.00	\$18,345.00	\$1,443,345.00	\$5,000.00	\$0.00	\$1,448,345.00
55.01.01	Hazardous & Contaminated ...	\$70,000.00	\$0.00	\$0.00	\$70,000.00	\$5,000.00	\$0.00	\$75,000.00
55.01.02	Demolition Work and Clearance	\$334,000.00	\$0.00	\$18,345.00	\$354,345.00	\$0.00	\$0.00	\$354,345.00
55.01.03	Groundworks	\$168,000.00	\$0.00	\$0.00	\$168,000.00	\$0.00	\$0.00	\$168,000.00
55.01.04	Temporary Traffic Management	\$98,000.00	\$0.00	\$0.00	\$98,000.00	\$0.00	\$0.00	\$98,000.00
55.01.05	Site Investigation	\$728,000.00	\$25,000.00	\$0.00	\$753,000.00	\$0.00	\$0.00	\$778,000.00
55.02	Substructure	\$14,000,000.00	\$0.00	\$0.00	\$14,000,000.00	\$0.00	\$0.00	\$14,000,000.00
55.02.01	Excavation	\$1,400,000.00	\$0.00	\$0.00	\$1,400,000.00	\$0.00	\$0.00	\$1,400,000.00
55.02.02	Piling	\$4,480,000.00	\$0.00	\$0.00	\$4,480,000.00	\$0.00	\$0.00	\$4,480,000.00
55.02.03	Foundations	\$2,660,000.00	\$0.00	\$0.00	\$2,660,000.00	\$0.00	\$0.00	\$2,660,000.00
55.02.04	Slabs	\$1,820,000.00	\$0.00	\$0.00	\$1,820,000.00	\$0.00	\$0.00	\$1,820,000.00
55.02.05	Basement Walls	\$2,380,000.00	\$0.00	\$0.00	\$2,380,000.00	\$0.00	\$0.00	\$2,380,000.00
55.02.06	Waterproofing	\$1,260,000.00	\$0.00	\$0.00	\$1,260,000.00	\$0.00	\$0.00	\$1,260,000.00
55.03	Super Structure	\$21,000,000.00	\$0.00	\$0.00	\$21,000,000.00	\$0.00	\$0.00	\$21,000,000.00
55.03.01	Structural Frame	\$2,520,000.00	\$0.00	\$0.00	\$2,520,000.00	\$0.00	\$0.00	\$2,520,000.00
55.03.02	Floors	\$6,090,000.00	\$0.00	\$0.00	\$6,090,000.00	\$0.00	\$0.00	\$6,090,000.00
55.03.03	Roof	\$3,360,000.00	\$0.00	\$0.00	\$3,360,000.00	\$0.00	\$0.00	\$3,360,000.00
55.03.04	Stairs and Ramps	\$2,520,000.00	\$0.00	\$0.00	\$2,520,000.00	\$0.00	\$0.00	\$2,520,000.00
55.03.05	Facade	\$1,470,000.00	\$0.00	\$0.00	\$1,470,000.00	\$0.00	\$0.00	\$1,470,000.00
55.03.06	External Walls	\$2,940,000.00	\$0.00	\$0.00	\$2,940,000.00	\$0.00	\$0.00	\$2,940,000.00
55.03.07	Windows and Doors	\$2,100,000.00	\$0.00	\$0.00	\$2,100,000.00	\$0.00	\$0.00	\$2,100,000.00
55.04	Architectural Works	\$10,500,000.00	\$0.00	\$0.00	\$10,500,000.00	\$0.00	\$0.00	\$10,500,000.00
55.04.01	Internal Walls and Partitions	\$1,785,000.00	\$0.00	\$0.00	\$1,785,000.00	\$0.00	\$0.00	\$1,785,000.00
55.04.02	Handrails	\$840,000.00	\$0.00	\$0.00	\$840,000.00	\$0.00	\$0.00	\$840,000.00
55.04.03	Internal Doors	\$1,575,000.00	\$0.00	\$0.00	\$1,575,000.00	\$0.00	\$0.00	\$1,575,000.00
55.04.04	Wall Finishes	\$1,365,000.00	\$0.00	\$0.00	\$1,365,000.00	\$0.00	\$0.00	\$1,365,000.00
55.04.05	Floor Finishes	\$735,000.00	\$0.00	\$0.00	\$735,000.00	\$0.00	\$0.00	\$735,000.00
55.04.06	Ceiling Finishes	\$1,260,000.00	\$0.00	\$0.00	\$1,260,000.00	\$0.00	\$0.00	\$1,260,000.00

Key features and benefits:

- **Secure Access** – Allow users to only access the features and project data they are responsible for using the highly customisable security module.
- **Cloud-based Solution** – Receive new features and functionality without interrupting your project workflow.
- **Project-centric** – Create projects and summarise multiple projects for organisation-wide reporting.
- **Organisation Definitions** – Develop common metadata fields and standard calculated fields for all projects in the organization. Projects using organization definitions can be leveraged for common cost reporting practices and combined organizational level reporting.
- **Flexible Coding Structure** – Use your own coding structure for flexibility in project reporting.
- **Data Import/Export** – Import and export data in a Microsoft Excel format.
- **Integrate with Other Applications** – Synchronise Cost with other applications, such as Primavera P6 EPPM (standard integration using Web Services) and ERP financial systems.
- **Earned Value Performance Measurement** – Variance analysis and reporting features.
- **Cost Forecasting**: Generate cost forecasts from the current cost data, earned value metrics and latest schedules.
- **Report Builder** – Quickly create and generate custom reports using various options; save these report specifications and use as a template for additional reports.
- **Activity Stream** – Stay informed of your project activity in a single location by viewing the events, actions, and flow of data performed on a project in a single location.
- **Online Assistant** – Guide you every step of the way to perform tasks within the application, providing a hands-on learning tool.

Cost Control

The project Cost Worksheet is the heart of Oracle Aconex Cost. Everything captured in Oracle Aconex Cost is reflected on the project cost worksheet. It represents the project cockpit for a cost controller.

The Cost worksheet is designed to have the familiarity of Excel but with the reliability of a database and security of an audit trail. It enables users to track and report on project details with unlimited work breakdown structure (WBS) elements, control accounts, and work packages also known as cost codes or budget codes. Details are rolled up or summarized for performance measurement.

- **Work Breakdown Structure (WBS)** brings clarity to project scope and organises the team’s work into manageable sections, which is critical to project success.
- **Control Accounts** are activities or small groups of similar work with a defined scope, schedule, and budget. They sit under a WBS node and are composed of multiple Control Elements.
- **Control elements** are used to categorize types of cost, hours, and quantity data that are budgeted and tracked on a project. Control elements are sub-elements of control accounts, work packages, and progress packages.

Figure 56: WBS, Control Accounts and Control Elements

The screenshot displays the Oracle Aconex Cost Worksheet interface. The top navigation bar includes 'Tasks', 'Models', 'Documents', 'Mail', 'Field', 'Packages', 'Cost', 'Tenders', 'Workflows', 'Supplier Documents', 'Directory', 'Insights', and 'Setup'. The main area is titled 'Cost Worksheet' and shows a reporting period of 'Jul '22'. A sidebar on the left lists various project management categories like 'Control Elements', 'Schedule Activities', 'Direct Actuals', etc. The central table shows a hierarchical WBS structure with columns for Level, Name, Code, Description, Baseline Budget, Approved Budget Changes, Approved Budget Transfers, Approved Budget To Date, and Approved Budget To Date. Red arrows point to 'WBS' (Site Preparation Works), 'control account' (Substructure), and 'control elements' (Bitumen and Backfilling). Below the WBS table, a 'Control Elements' summary table is shown with columns for Name, Baseline Budget, Approved Budget Changes, Approved Budget Transfers, Approved Budget, Estimate to Complete, All Commitments, Estimate at Completion, and At Completion Variance.

Level	Name	Code	Description	Baseline Budget	Approved Budget Changes	Approved Budget Transfers	Approved Budget To Date	Approved Budget To Date
1	5 Star	5S		\$70,000,000...	\$51,375.00	\$0.00	\$70,051,375...	\$641,5...
1	Site Preparation Works	5S.01		\$1,400,000.00	\$25,000.00	\$18,345.00	\$1,443,345.00	\$408,6...
1.1	Hazardous & Contaminated Mate...	5S.01.01		\$70,000.00	\$0.00	\$0.00	\$70,000.00	\$25,5...
1.2	Demolition Work and Clearance	5S.01.02		\$336,000.00	\$0.00	\$18,345.00	\$354,345.00	\$28,2...
1.3	Groundworks	5S.01.03		\$168,000.00	\$0.00	\$0.00	\$168,000.00	\$61,3...
1.4	Temporary Traffic Management	5S.01.04		\$98,000.00	\$0.00	\$0.00	\$98,000.00	\$27,8...
1.5	Site Investigation	5S.01.05		\$728,000.00	\$25,000.00	\$0.00	\$753,000.00	\$265,6...
1.6	Dewatering	5S.01.06		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2	Substructure	5S.02		\$14,000,000...	\$1,500.00	\$0.00	\$14,001,500...	\$...
2.1	Excavation	5S.02.01		\$1,400,000.00	\$0.00	\$0.00	\$1,400,000.00	\$...
2.2	Piling	5S.02.02		\$4,480,000.00	\$0.00	\$0.00	\$4,480,000.00	\$...
2.3	Foundations	5S.02.03		\$2,660,000.00	\$1,500.00	\$0.00	\$2,661,500.00	\$...
2.4	Slabs	5S.02.04		\$1,820,000.00	\$0.00	\$0.00	\$1,820,000.00	\$...
2.5	Basement Walls	5S.02.05		\$2,380,000.00	\$0.00	\$0.00	\$2,380,000.00	\$...
2.6	Waterproofing	5S.02.06		\$1,260,000.00	\$0.00	\$0.00	\$1,260,000.00	\$...
3	Super Structure	5S.03		\$21,000,000...	\$0.00	\$0.00	\$21,000,000...	\$...
3.1	Structural Frame	5S.03.01		\$2,520,000.00	\$0.00	\$0.00	\$2,520,000.00	\$...
3.2	Floors	5S.03.02		\$6,090,000.00	\$0.00	\$0.00	\$6,090,000.00	\$...

Name	Baseline Budget	Approved Budget Changes	Approved Budget Transfers	Approved Budget	Estimate to Complete	All Commitments	Estimate at Completion	At Completion Variance
Bitumen (Cost)	\$700,000	\$0	\$0	\$700,000	\$35,000	\$665,000	\$700,000	\$0
Backfilling (Cost)	\$560,000	\$0	\$0	\$560,000	\$28,000	\$532,000	\$560,000	\$0

The cost worksheet consolidates data from different places:

- **Control Elements** – You will define your project budget, Estimate To Complete (ETC) and Estimate At Completion (EAC) at this level across cost, and hours.
- **Schedule Activities** – Your project schedule data. Keep budgets and schedule in sync using one-click integration with Oracle Primavera P6 EPPM or Primavera Cloud, or import and export data in a csv file format using pre-defined templates.
- **Direct Actuals** – Actual data such as payroll and other direct spends, across cost, and hours against the budget. Actuals can be imported from a csv file or through an automated integration with an ERP system.
- **Contracts** – All your project commitments with project subcontractors, vendors, and upstream contracts.
- **Change Events, Budget Changes and Contract Changes** – Represent the requested change requests and change orders, that you may want to consolidate in the cost worksheet to anticipate future cost increase.

You can create and save your own custom views in the cost worksheet to display only the columns of interest, to ensure you are not overwhelmed when using cost. Example of views could be 'Cost Summary View', 'Contracts', 'Change Management', etc.

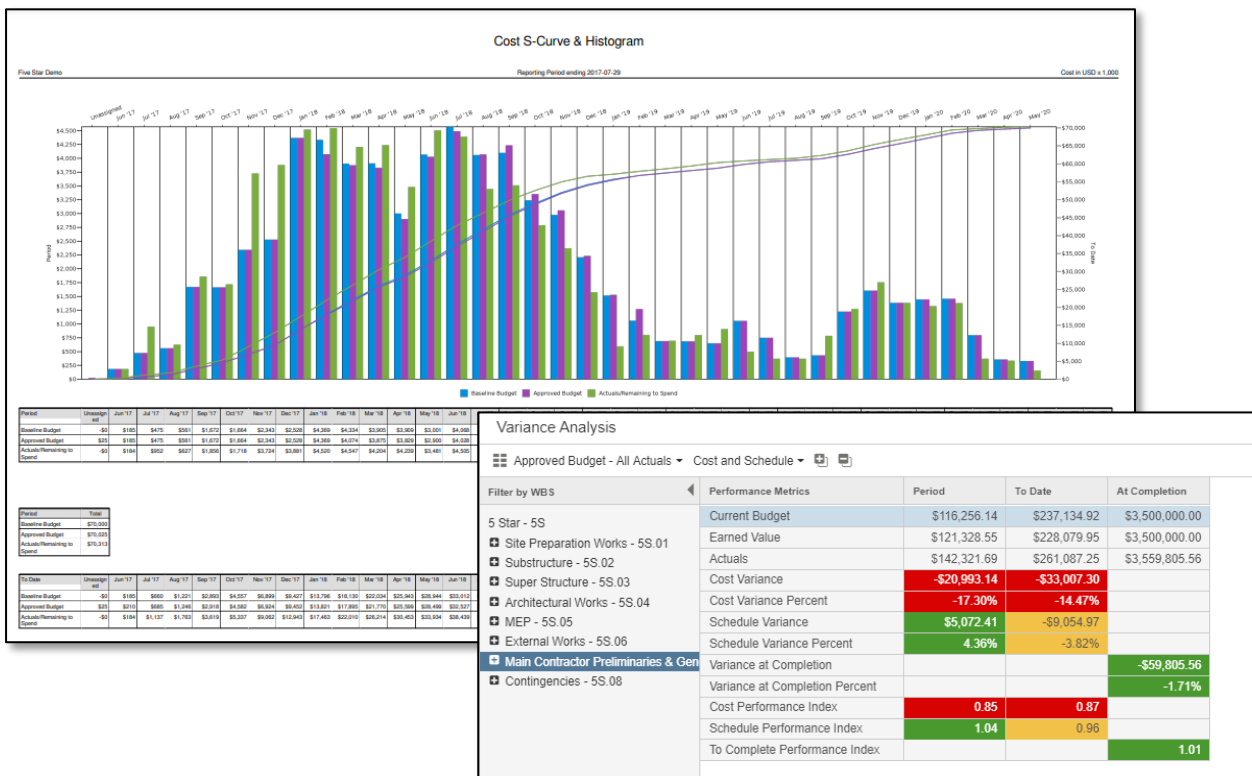
At the start of the project, you will be able to establish your project budgets by assigning cost, hours and quantities at the Control Element level. Budgets (Original, Current or Alternate) can be imported or entered manually and once final, locked as a baseline. This will form the basis of the Original Budget in Cost, which is a baseline used for tracking and reporting. Over time, changes to the budget will be recorded through the project change process and reflected in the Current Budget when approved. This will help you manage your projects to their planned budgets and gain visibility into the outcome so that you can take corrective action before problems occur.

Oracle Aconex Cost provides a lot of flexibility and enables you to configure distribution curves, percent complete methods, forecast methods, etc. to meet your project specific requirements.

You will also be able to track progress and program performance with real-time cost tracking and variance analysis, including progress across hours worked and quantities installed. You will be able to use earned value methods to forecast your costs, such as Cost Performance Index (CPI), Schedule Performance Index (SPI), and other tools.

In the Oracle Aconex Reporting view, you will be able to create customizable and easy-to-understand reports in minutes with our point-and-click report builder. Users will be able to view report details at the project level, program level, or across your entire portfolio. Reports are available in tabular or graphical formats.

Figure 57: Cost S-Curve and Variance Analysis

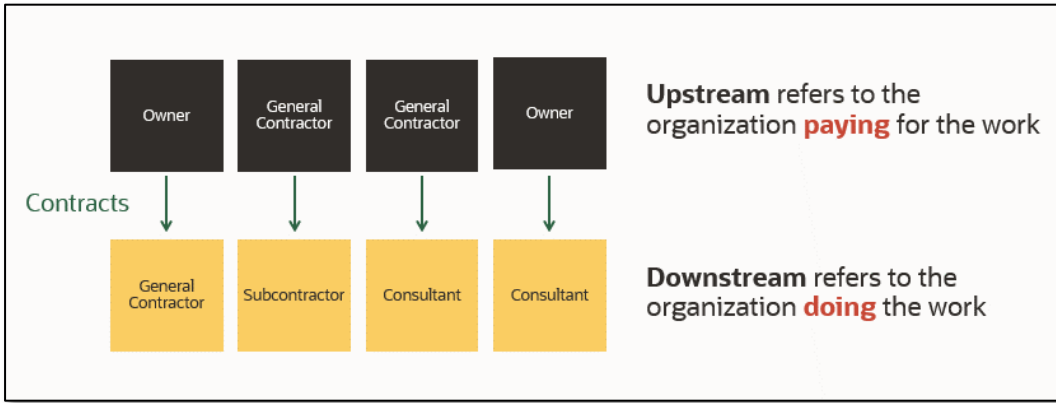


Collaborative Contracts

You will be able to create two types of contracts in Oracle Aconex Cost:

- **Upstream Contracts** – Contracts reflect revenue to your organization (example contract from the GC to the Owner)
- **Downstream Contracts** – Contracts are shown as commitments on the cost worksheet (example contract from GC to subcontractors).

Figure 58: Upstream and Downstream Contract Options in Oracle Aconex Cost



Contracts are shown in the Contracts Register and all the key information, such as contract number, name, and control accounts is displayed. Each row shows a different contract, with Upstream and Downstream contracts listed on two separate tabs.

Contracts consist of line items and a schedule of value (SOV) that are tied to the WBS. Contract pay items are displayed in the bottom pane after selecting a contract in the register, and they represent the detailed breakdown of the contract and form the structure used for progress claims (payment applications/certifications). They are valued, and are related, to the cost worksheet as a commitment.

Figure 59: Contracts Register in Oracle Aconex

The screenshot shows the Oracle Aconex interface. The top navigation bar includes 'ORACLE Aconex', 'Five Star Demo', a search bar, and user information 'Mr Patrick O'Leary Majestic'. The main area is titled 'Contracts' and has tabs for 'Upstream' and 'Downstream'. Below the tabs is a table of contracts:

Contract No.	Contract Status	Name	Description	Shared Contract	Downstream Org.	Downstream Contact	Internal Contract No.
MAJ-INT-1	Approved	Majestic Directly Delivered		<input type="checkbox"/>	Majestic (Internal)	Patrick O'Leary	
CUN-1365	Approved	External Works		<input type="checkbox"/>	Cunninghams	Lucy Dobbs	
AT&S - 8994982	Approved	MEP Sub Contract		<input checked="" type="checkbox"/>	A. Tate & Sons	Kevin Tate	
T-03L04394	Approved	Site Hoarding		<input checked="" type="checkbox"/>	Brigade Solutions	Neil Robson	

Below the contract table, there is a section for 'Contract Pay Items (26)'. It shows a detailed view of pay items for the selected contract:

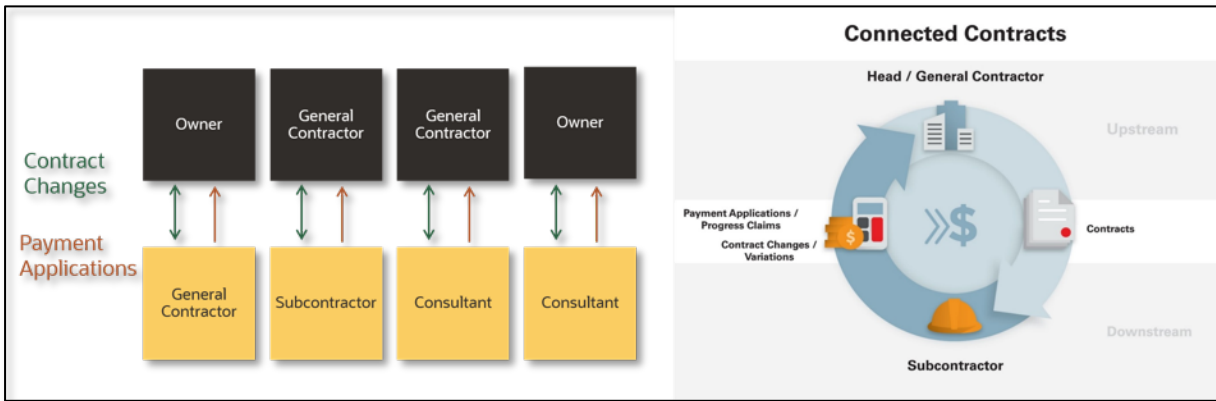
Source	Pay Item No.	Internal Pay Item No.	Name	Funding Source	Description	Internal Description	Control Account	Control Element
Original Contract	MEP-0001		Sanitary - Toilets	County Tax Bond			5S.05.01 - Sanitary	Toilets
Original Contract	MEP-0002		Sanitary - Sinks	County Tax Bond			5S.05.01 - Sanitary	Sinks
Original Contract	MEP-0003		Equipment - Pumps	County Tax Bond			5S.05.02 - Equipment	Pumps
Original Contract	MEP-0004		Equipment - Chilled Water ...	County Tax Bond			5S.05.02 - Equipment	Chilled Water...
Original Contract	MEP-0005		Waste Disposal - Garbage S...	County Tax Bond			5S.05.03 - Waste Disposal	Garbage Chu...
Original Contract	MEP-0006		Waste Disposal - Bins	County Tax Bond			5S.05.03 - Waste Disposal	Bins
Original Contract	MEP-0007		Water Works - Pipes	County Tax Bond			5S.05.04 - Water Works	Pipes
Original Contract	MEP-0008		Heating - Pipes	County Tax Bond			5S.05.05 - Heating	Pipes
Original Contract	MEP-0009		Heating - Heat Exchange	County Tax Bond			5S.05.05 - Heating	Heat Exchange
Original Contract	MEP-0010		Air Conditioning - Ducting	County Tax Bond			5S.05.06 - Air Conditioning	Ducting
Original Contract	MEP-0011		Air Conditioning - Pipes	County Tax Bond			5S.05.06 - Air Conditioning	Pipes
Original Contract	MEP-0012		Air Conditioning - Evaporator	County Tax Bond			5S.05.06 - Air Conditioning	Evaporator
Original Contract	MEP-0013		Air Conditioning - Compres...	County Tax Bond			5S.05.06 - Air Conditioning	Compressor
Original Contract	MEP-0014		Ventilation - Ducting	County Tax Bond			5S.05.07 - Ventilation	Ducting
Original Contract	MEP-0015		Electrical Fittings - Switches	County Tax Bond			5S.05.08 - Electrical Fittings	Switches
Original Contract	MEP-0016		Electrical Fittings - Sockets	County Tax Bond			5S.05.08 - Electrical Fittings	Sockets
Original Contract	MEP-0017		Fire Protection - Fire Fightin...	County Tax Bond			5S.05.09 - Fire Protection	Fire Fighting...

A contract also enables you to determine “how much to cut the check for” using retention and taxes. You will be able to define and Include retention rules and manage retention release request with Oracle Aconex contracts.

Moreover, Oracle Aconex Cost allows you to manage your commitments, changes, and payment processes throughout your supply chain, and if both parties are on Oracle Aconex, they can share a contract and collaborate on the platform, while still maintaining privacy and security of your data. When a contract is shared, both orgs will be able to create and submit contract changes for review and approval. Downstream organisations will be able to submit payment applications (certifications) for review and approval. An audit trail will capture every step of the

change order and payment application in Oracle Aconex. If needed, contracts and payment apps can be integrated into your corporate finance system.

Figure 60: Contract Changes and Payment Applications (Certifications)



Contract Changes

Upstream and downstream organisations will be able to submit change order requests and have the ability to review, approve, reject, revise and re-submit.

Via a contract change, you will be able to add new line items to the contract or modify existing line items. Supporting documentation can be attached to the contract change (from the document register or your local desktop). Edits and reviews will be private until shared with others.

Figure 61: Example of a Contract Change

The screenshot shows the Oracle Aconex interface for a 'Contract Change'. The change is for a 'Topographical Survey' with a change amount of \$22,500.00. The interface includes a sidebar with navigation options like 'Cost Management', 'CONTRACTS', 'CHANGE MANAGEMENT', 'UTILITIES', and 'NEWS AND FEEDBACK'. The main content area displays the change details and a table of change items.

Change Amount	Requested	Accepted
Change Amount	\$22,500.00	\$22,500.00
Other Proceed or Approved Changes	-	\$0.00
Original Contract	-	\$38,035,845.00
Current Contract	-	\$38,058,345.00
Schedule Impact (days)	0.00	0.00

Source	Pay Item No.	Pay Item Name	Requested	Accepted
New Pay Item	MAJ-INT-1.0...	Topographical Survey	\$22,500.00	\$22,500.00

Payment Applications

Downstream organisations will be able to submit monthly payment applications (certifications) using percent complete against line items on contracts.

The upstream organization can reduce the payment request with required reasons, and all payment applications (including edits and reviews) will be private until shared with others..

Figure 62: Example of a Payment Application (Certification) in Oracle Aconex

Payment Application Summary

	Requested	Accepted
Amount	\$436,653.77	\$436,653.77
Retention	\$0.00	\$0.00
Retention Released	\$0.00	\$0.00
Net Amount	\$436,653.77	\$436,653.77

Currency: USD

Pay Item No.	Name	Current Contract	Proceed Changes	To Date Amount	Previous Amount	Requested	Requested Percent Complete	Accepted
		\$38,058,345.00	\$0.00	\$595,933.77	\$159,280.00	\$436,653.77	1.57%	\$436,653.77
MAJ-INT-1...	Hazardous & Contaminated Materials...	\$70,000.00	\$0.00	\$25,800.00	\$4,100.00	\$21,700.00	36.86%	\$21,700.00
MAJ-INT-1...	Demolition Work and Clearance - De...	\$42,000.00	\$0.00	\$15,750.00	\$750.00	\$15,000.00	37.50%	\$15,000.00
MAJ-INT-1...	Demolition Work and Clearance - Cle...	\$312,345.00	\$0.00	\$17,770.00	\$770.00	\$17,000.00	5.69%	\$17,000.00
MAJ-INT-1...	Groundworks - Ground Preparation	\$28,000.00	\$0.00	\$25,000.00	\$5,000.00	\$20,000.00	89.29%	\$20,000.00
MAJ-INT-1...	Groundworks - Excavation	\$140,000.00	\$0.00	\$36,000.00	\$5,000.00	\$31,000.00	25.71%	\$31,000.00
MAJ-INT-1...	Temporary Traffic Management - Con...	\$14,000.00	\$0.00	\$9,000.00	\$2,000.00	\$7,000.00	64.29%	\$7,000.00
MAJ-INT-1...	Temporary Traffic Management	\$28,000.00	\$0.00	\$10,700.00	\$2,200.00	\$8,500.00	38.21%	\$8,500.00
MAJ-INT-1...	Temporary Traffic Management	\$56,000.00	\$0.00	\$7,650.00	\$500.00	\$7,150.00	13.66%	\$7,150.00

Finally, Oracle Aconex Cost gives you the possibility to create custom manual or calculated fields to extend the standard fields of the various cost objects managed in Oracle Aconex Cost.

Change Management

Any changes (+/-) to approved budgets or approved contracts is done via Change.

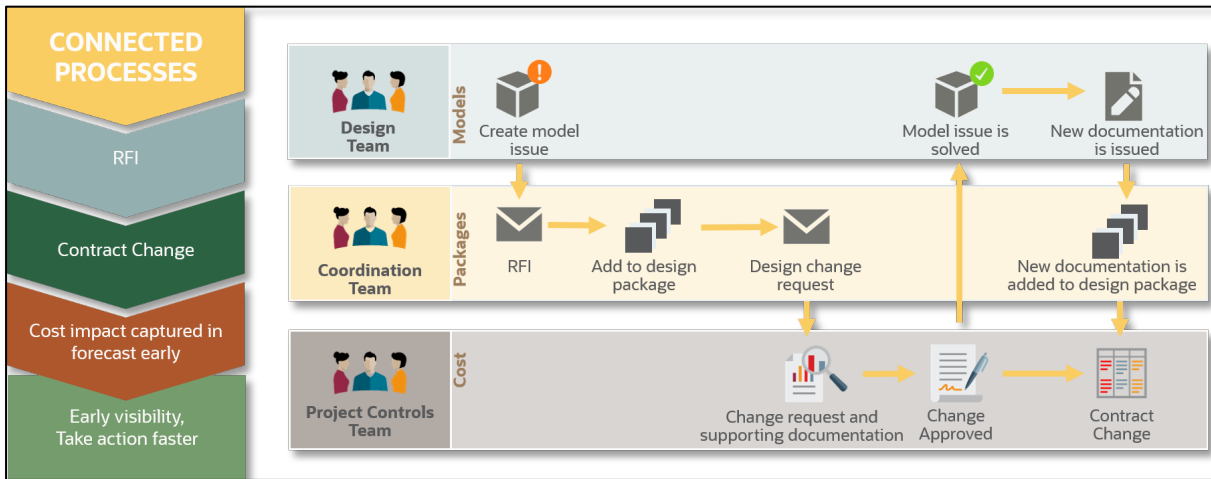
It is important to realise that the Oracle Aconex Cost module is tightly integrated with the rest of the Oracle Aconex platform, in particular with the Mail and Documents modules.

As a future Contract Change request may start as a simple Request For Information (RFI) sent by a subcontractor, or as a model issue raised in a BIM model, it is critical to be able to link them to retain a project history behind the contract change. Oracle Aconex will enable you to do so by creating a Change Event or Contract Change directly within a Mail. Cost controllers will also be able to use the 'Change Impact Review' page in the Cost module to assess the potential and real cost impacts of Oracle Aconex mail.

When raising a Contract Change, it is also important to be able to attach any supporting documentation. Oracle Aconex also makes it easy to do so as all your project documentation sit inside your document register.

In a nutshell, Oracle Aconex provides a single platform to manage an end-to-end process starting with a mail correspondence and finishing with the delivery of a contract change. No information needs to be duplicated or exported to be managed in an external system. This is another example where Oracle Aconex provides a single source of truth for the project teams.

Figure 63: Example of an end-to-end process managed in Oracle Aconex.



Change Events

Change Events help you manage and record the budget and cost impact of changes to currently approved project scopes. This lets you see what might happen if changes occur and gives you a specific place to plan for future changes. It is important to note that change events may or may not be approved, and they may only impact the project budget, with no impact to your existing contracts. Change Events represent the Change Requests in your project.

Change Events also gives you a home for planning potential/future changes. This is done through front end estimating and/or reviewing a contractor’s proposal by using an outside cost consultant or in-house estimators.

Changes are tracked from inception to resolution in Oracle Aconex with audit trails and accountability along the way. The collaborative capabilities of Oracle Aconex also cut down on redundant data entry and risk of errors.

When you reach a point in the change management process where you are confident that the change will result in a change order, you can create the formal Contract Changes directly from the Change Event Items detail pane. The Change Event(s) and Contract Change(s) will be linked automatically.

If you need to edit a change event after it has been linked to a contract change, you can use the update wizard to keep the contract change in sync.

Contract Changes can also be created directly and linked to mail correspondence and documents. The creation of a Change Event is not mandatory.

Asset Handover

Through Oracle Aconex a complete and accurate set of interrelated and cross-referenced information is maintained (e.g., models, 2D drawings, manuals and specifications).

Oracle Aconex offers a streamlined, progressive handover solution with the following features: The Oracle Aconex platform provides a full O&M solution starting from identifying and capturing of the documentation through to reviewing and approving it then finally delivering it to the client.

Delivery can be accomplished via “Oracle Aconex Smart Manuals” module which provides:

- Access via Folder Structure
- Access via comprehensive Graphical Interface
- Access via search engine capability.

In combination with the Oracle Aconex Supplier Documents and Workflows Modules, our Handover solution offers the ability to collect, review and assemble O&M information through streamlined and automated processes with Oracle Aconex. Upload documents and designs into the cloud during construction or retrospectively for a

deliverable that maximises effective asset management. Information is quick and easy to access, reducing productivity risk.

Because Oracle Aconex Handover is created as part of a project's regular workflows, they are ready when the projects are completed.

Figure 64: Example of a 2D Drawing

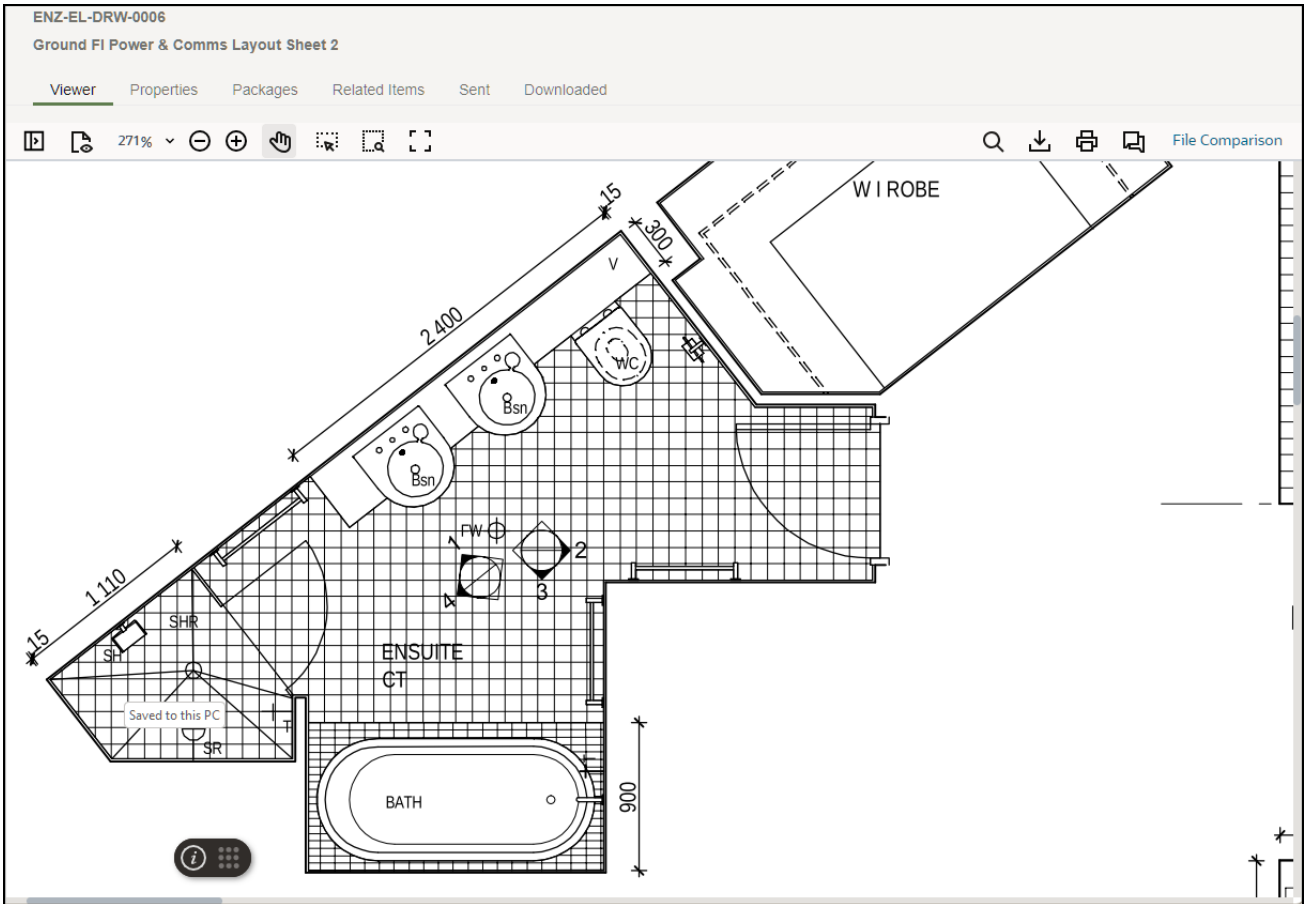
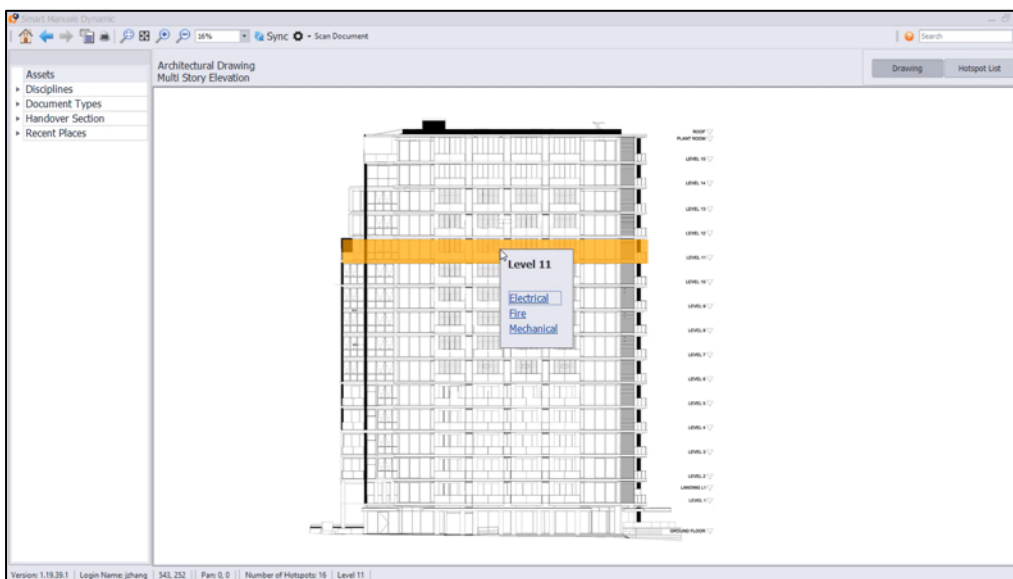


Figure 65: Another example of a 2D Drawing



Project Archive

There are multiple options available for project data storage upon completion.

Oracle Aconex's project archiving capabilities provides a read only searchable archive containing a copy of all of your organisation's project correspondence and documents (including metadata). These can either be an online or an offline copy. The online archive is available only to your organisation through secure login, whilst the offline archive is an encrypted package of your project delivered via a secure hard drive/USB.

Additionally, we also offer a Smart Manual copy of specific documents required for handover of O&M documents, which can be navigated using a graphical user interface. 2D model drawings with asset references provide asset "hot-spots" which when clicked provide access to linked drawings, manuals, photos, reports, schematics, registers and reports.

Alternatively, documents can be manually downloaded in bulk using the web application, or our robust web service API interface allows documents to be extracted.

Deployment of the Solution

Oracle Aconex Configuration

The Oracle Aconex platform has been designed with capital project delivery needs in mind. And there is no software or hardware to install. This means that there is no lengthy customization – it’s already built for the job.

However, we do recognize that each project has its own requirements. That’s where our globally dispersed Client Services teams can help with services, like:

- Engagement with the client, contractor, project manager and/or lead consultants to establish optimal project set-up, including advice on documentation guides, project business processes, workflows, and templates.
- Professional Services to establish best-practice collaboration procedures, provide customized training and to leverage advanced capabilities in the platform.

All support and access to online training and public webinars is included in the fee for all project participants collaborating through the Oracle Aconex platform. There are no additional support charges, which helps drive user adoption.

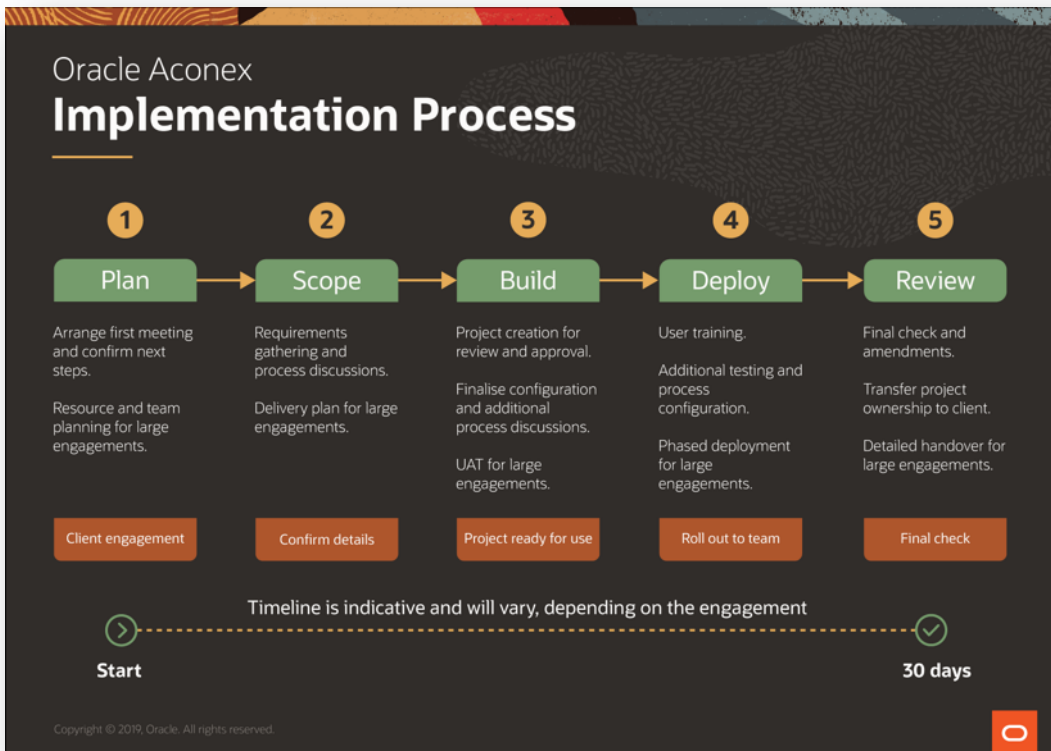
The rest of this section describes how Oracle Aconex will be configured. Additional information can be found on the [Oracle Aconex Support Central website](#).

Implementation Process

The Oracle Aconex implementation process is based on standard project management methodologies. It is consistent and designed to make getting started easy and successful.

The key phases of the implementation process are summarised below.

Figure 66: Overview of the Implementation Process



Plan

This phase will start on receipt of the Project Services Order. We will work with you to make sure we understand what needs to be delivered, and who is involved. We will identify risks and set a course that removes surprises from the process.

During this phase, a project sponsor will need to be identified on your side, as well as the project participants who will be involved in specifying the project configuration.

We will deliver the Project Implementation Plan, review it and agree on it with you.

Scope

Next, we will collect and confirm the information we need to get the system up and running. Scoping may take a number of meetings to finalize.

We will develop with you a document specifying the project specific settings, configurations and processes to be used during the project. This document will be reviewed and approved by you, and form the basis for the configuration scope to be delivered.

Build

Once you've approved the configuration plan, we will build the projects on the Oracle Aconex platform using the settings as defined by the project team and will enable access to the additional modules included in the service order (for example Workflows, Field, etc.).

We will ensure that the requirements are taken care of and suggest alternative solutions if necessary. Also, we will work with the project team on the development and implementation of the project training plans.

Deploy

Once the project is ready for use, we will get the team on-board and up to speed. Training will commence according to the recommended training regime as defined in the project training plans

We may also conduct User Acceptance Testing (UAT) to confirm that the system is set up to meet your needs. We will adjust the configuration if required.

Project Go Live

Oracle Aconex project settings control will pass to the nominated Client Project Administrator (or a team) who will then be responsible for future project configuration/modification.

Review

We'll confirm that all deliverables, tasks and objectives are complete. Once we've completed the review, the implementation phase is finished.

In particular, post implementation of Oracle Aconex progress meetings will be conducted at week +1 and +2.

From that point onwards, the Oracle Client Services Team will be available to provide ongoing support throughout the life of the project. We will provide unlimited support online and via our 24/7 Service Desk.

Implementation Support

All our implementations include a standard "Setup Service" package to get your project up and running. This package includes up to 16 hours of setup services (see "Appendix B: Oracle Aconex Professional Services – Service Description" for more details). In addition to it, fee based Professional Services exist to maximize your use of Oracle Aconex.

Oracle would mobilize the following resources to deliver the configuration of the project and assist you:

- A Customer Success Manager, who will be overseeing the Oracle engagement on the project during the first 6 – 9 months, ensuring the project is adequately resourced and stays on track, that the respective scopes are agreed and met, and would be accountable for Stakeholder map, Project plan, Workshop plan and Training plan.
- A Consultant in charge of the implementation itself, in charge of the implementation deliverables, project configuration, process mapping, key stakeholder training, and will be heavily involved in implementation progress meetings, and the key contact for all stakeholders.

Depending on schedule and co-occurrence of the projects, we may mobilize additional consultants, to take part in implementation progress meetings, assist with process mapping & smooth progress of the implementation.

A detailed Project Implementation Plan will be defined jointly with you following project kick-off.

Training

One of the key advantages of Oracle Aconex is that it's easy to use, most of clients get up and running with the system after one or two 1-hour online training sessions.

Oracle Aconex offers a unique support model which includes unlimited support via our 24/7 Service Desk as well as our online Support Central – which offers a range of self-paced training, video tutorials and online webinars. It provides unlimited online training and access to videos and webinars structured for self-paced learning to suit all user and skill levels, including specialised training modules for project and organisation administrators.

For more information on online training and accreditation, please [click here](#).

Oracle Aconex also offers customised workshops via Professional Services as well as an Oracle Aconex Accredited Program which is provided as a fee for service. Our consultants support our clients with their industry expertise and in-depth product knowledge of Oracle Aconex.

Details of training options are below:

- **Online Self-Paced Training** - Self-paced tutorials are available on Support Central to learn the basics of Oracle Aconex. These are available anytime and can be viewed as many times as required. 'Getting Started' explains the fundamental concepts of Oracle Aconex. It includes videos and a test environment in which to practice. Oracle Aconex's most commonly used features are detailed in step-by-step instructions on Support Central too. Questions can be asked via our 24/7 Service Desk (phone or email). Support Central can be accessed here: <https://help.aconex.com/>
- **Online Global Webinars** - Oracle Aconex training webinars provide live, instructor-led training without having to leave your computer. Examples such as: Oracle Aconex Fundamentals, Managing Multiple Documents, Oracle Aconex Administration, Workflow Participant, Bulk Processing, Field and Inspections (including Administration). Webinar bookings with detailed course syllabus can be found on the registration page for each webinar. See link for more information: <https://help.aconex.com/online-training/webinars>.
- **Oracle Aconex Accredited** - Oracle Aconex would recommend all users undertake our Oracle Aconex Accredited Associate (AAA) in order to gain the basic skills and concepts of Oracle Aconex. Details of Oracle Aconex accreditation courses available through Support Central, please see link for more information: <https://help.aconex.com/online-training/aconex-accredited>.
- **Consultant Led Targeted Training** - Additionally, for an extra fee, targeted training may be organised for features not covered by the courses above or for advanced system users who wish to introduce time efficiencies in their use of Oracle Aconex. This may include managing project configuration, workflow creation, supplier documents, or tenders (bids).

Maintenance and Support

Oracle offers a unique support model which includes unlimited support through its 24/7 Service Desk. The Service Desk will support not only the paying organisation, but ALL organisations collaborating on the projects through the Oracle Aconex platform.

The Service Desk teams are located in four offices and provide 24/7 on-call support in the Follow-The-Sun manner:

- Melbourne, AUS (covers Australasia time zones)
- Nottingham, UK (covers Europe time zones)
- Bangalore, IND (covers Europe, Middle East and Asia time zones)
- San Francisco, USA (covers North and South America time zones)

Regardless of the time zone or location of the Client, queries are handled by a live person who will answer their call and provide support.

Typical team structure consists of Service Representatives and a Team Leader. Besides having Service Representatives in every team, teams benefit from having Tier 2 Service Representatives whose deep technical experience is used to help manage the more complicated issues:

- **Service Desk Operations Manager** – Overall responsibility for Service Desk and strategy. Ensures targets and quality standards are met. Leads, coaches and mentors team members.
- **Team Leader** – Responsible for day-to-day operation and management of regional team. Ensures targets and quality standards are met. Escalation point for client issues.
- **Global Quality Assurance Lead** – Ensures support/customer service quality standards are met. Escalation point for client complaints. Provides coaching and support to teams on quality.
- **Service Representative** – Provides inbound/outbound phone and email/web case support to clients. Escalates issues to and liaises with Engineering / Production Operations teams to resolve them.
- **Service Representative Tier 2** – Provides inbound/outbound phone and email/web case support to clients, with specific focus on satellite apps and more technically demanding issues. Escalates issues to and liaises with Engineering / Production Operations teams to resolve them.

Integration using API's

Oracle Aconex can be integrated with internal and enterprise applications using the Oracle Aconex APIs Web Services. Integrations help clients automate data exchange between Oracle Aconex and their other systems regularly (daily / weekly) or on specific process triggers (approvals / rejection, etc.) or on an ad-hoc basis. Oracle are happy to assist clients in building the required middleware that will help achieve the required integration.

Our Web Services APIs are available at <https://help.aconex.com/aconex/aconex-apis>

Oracle Aconex web services are designed to be programming language and platform independent and use a RESTful implementation with common standards such as HTTPS, URL and JSON. Oracle Aconex APIs have been proven in the most demanding project environments and can support integrations with a variety of systems, including:

- Enterprise Content Management (e.g. SharePoint, Documentum)
- Scheduling (e.g. Primavera P6 and Primavera Cloud)
- Enterprise Resource Planning (e.g. Oracle, SAP, JD Edwards)
- O&M and Asset Management (e.g. IBM Maximo)
- Dashboard & Reporting Tools (e.g. CIC Analytics)
- GPS (supports integration with Google Maps)
- Microsoft Office (Outlook Plugin, Office 365)

Security and Hosting

Platform Security

As organisations rely more on multi-company collaboration and multiple devices to manage project information and processes, security has become increasingly critical. Oracle Aconex provides multiple levels of security for SaaS-based, project-wide collaboration across different organisations. This model is continually evolving to address new threats and client expectations.

Oracle Aconex uses logical controls to separate customer data along with organisational controls to configure access permissions within in the system:

- Each user is a member of an organisation
- Each user is invited to participate in one or more projects for their organisation
- Each organisation's project information is private
- Each organisation must explicitly send information in order for others to see it
- Users cannot delete project information; a complete record is maintained of all changes and updates

Oracle Aconex has ISO 27001-2013 and has SOC 2 Type 2, Cyber Essentials Plus and ISO 19650 Kitemark certification. This documentation can be provided to customers with a non-disclosure agreement.

For Additional information on Oracle Aconex security controls please review the Consensus Assessment Initiative Questionnaire (CAIQ) for Oracle Aconex Cloud Applications @ https://www.oracle.com/a/ocom/docs/Oracle_Aconex-consensus-assessment-initiative-questionnaire.pdf Also please review Appendix A for additional Information Security Policies and Documentation.

Penetration testing is also routinely performed to check that systems have been set up in accordance with Oracle's corporate standards and that these systems can withstand their operational threat environment and resist hostile scans that permeate the Internet

Service Levels

The disaster recovery point objective (RPO) is 1 hours, the time objective (RTO) is 24 hours and the Service Level Objective is 99.5%.

Ownership

Oracle Aconex is a completely neutral platform. Oracle Aconex is built to provide every project participant with a secure system where each organisation retains ownership and control of its own data on the platform and nobody can see another organisation's information unless it is purposely made available to them.

BSI Certification for ISO 19650 and DIN SPEC 91391

Oracle Aconex is certified by the British Standards Institution (BSI) for functionality, security and support of BIM software in compliance with ISO 19650 and DIN SPEC 91391 standards, providing the following benefits:

- Facilitate your software procurement process – certification provides assurance
- De-risk your projects – using trusted software that supports your needs
- Save money, time and protect your business – ensuring your software maximizes project efficiency and accuracy

Oracle Aconex is a CDE tool which is used to facilitate the collaboration of project information data, providing Clients with a platform which is a single source of information for their project and is used to collect, manage and disseminate all relevant approved project documents for multi-disciplinary teams.

Oracle Aconex is able to assist in the collaborative production of architectural, engineering and construction information. Oracle Aconex provides a consistent and structured review process through the use of document register, workflow and mail templates (i.e. RFIs), all of which can be configured to assist Clients in meeting their compliance with relevant standards. Oracle Aconex is able to provide a complete record relating to the information exchange of each Client's projects accumulated from feasibility through to handover of the asset.

Connected BIM allows the project team to share, review, mark up and contribute to multi-dimensional models within Oracle Aconex. BIM collaboration provides an audit trail of decisions initiated from the model without requiring specialised software and facilitates the capture of O&M related documents which may remain linked to the model objects at handover.

Access Control

Encryptions

All user access to Oracle Aconex is via HTTPS with 2048-bit signed certificates and 256-bit SSL/TLS 1.2 or later encryption, including the full application login process. Users attempting to access the login page over HTTP will be automatically redirected to HTTPS.

Passwords

Passwords can be maintained within Oracle Aconex or through SAML 2.0 compliant identity providers.

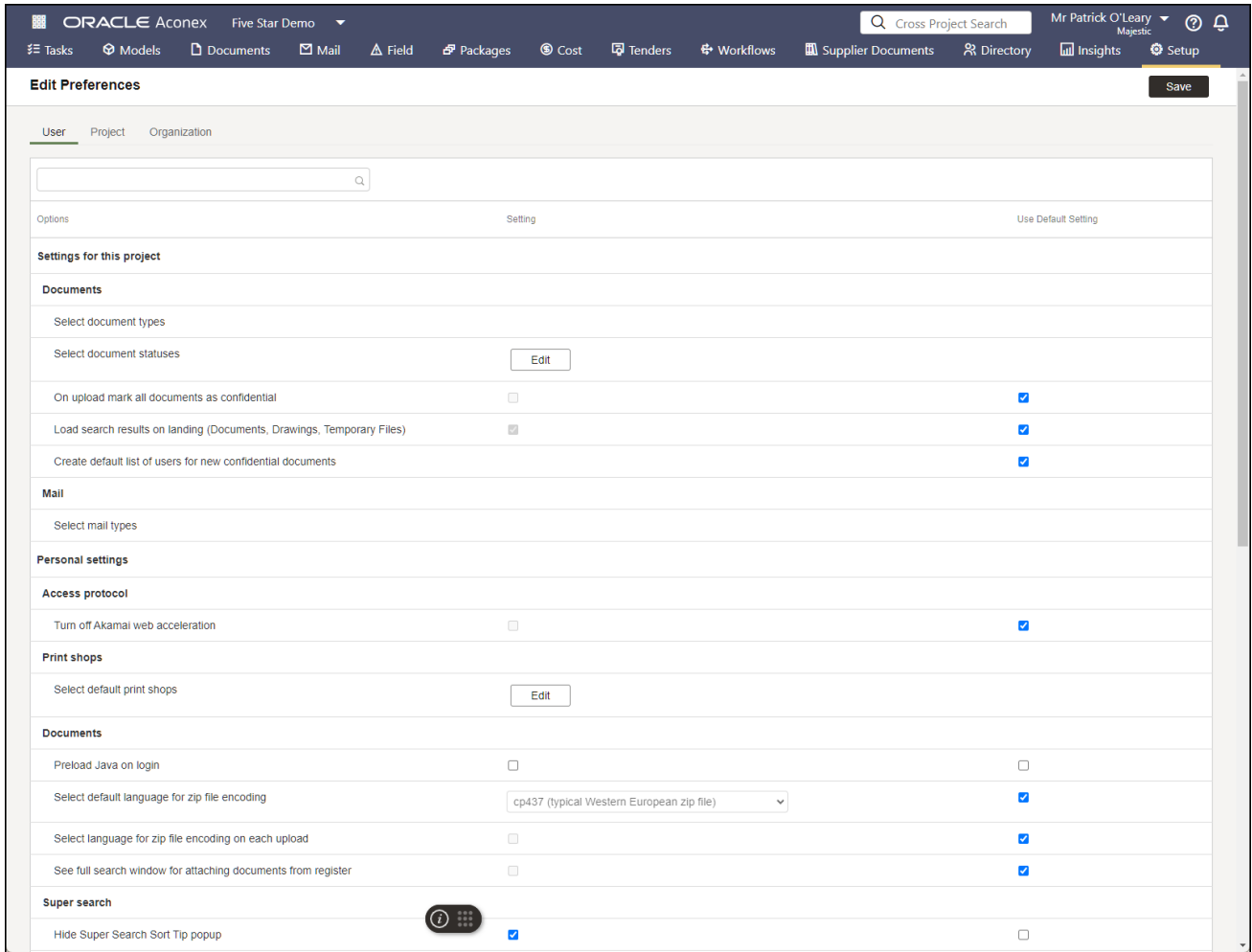
The Organisation Administrator can make changes to the Preferences settings for users within their own organisation. These changes will apply to all users in your organisation. For example

- **Set default password strength for new users** lets you choose from a pre-set selection of password strength and length options.
- Password complexity is determined by the project/org administrator. Single Sign On and 2-Step Verification may also be used, Lockout can be programmed for up to 5 attempts.
 - Oracle Aconex provides its tenants default levels of strong passwords and allows projects to enforce higher strength. Standard (8 – 16 characters, at least 2 letters and 2 numbers): (pa5sw0rd)
 - Complex (8 – 16 characters with minimum of 3 different types: capitals, lowercase, numbers & symbols) Allowed special characters are: [~!@#\$\$%^&*()_+] (Pa\$sword)

<https://help.aconex.com/DisplayContent/change-the-password-complexity-for-users-in-your-organization>

- **Set default password access rule for new users** lets you choose from a pre-set selection of password expiry options.
- As a security measurer Oracle Aconex has configurable session timeout periods that are enforced by a session cookie. Organisation Administrators are able to configure requirements in line with each Client's requirements. Organization administrators can also disable the account of a user in your organization. This will stop them from logging in to Oracle Aconex.

Figure 67: Administrator Preferences in Oracle Aconex



Appendix A: Oracle Aconex Information Security Policies and Documentation

Please refer to

https://www.oracle.com/contracts/docs/oracle_aconex_cloud_services_service_descriptions.pdf?download=false for the Oracle Aconex Cloud Service Descriptions.

Please refer to

https://www.oracle.com/contracts/docs/corporate_data_processing_agreement_062619.pdf?download=false for the Oracle Aconex Data Processing Agreement.

Please refer to https://www.oracle.com/a/ocom/docs/Oracle_Aconex-consensus-assessment-initiative-questionnaire.pdf for the Consensus Assessment Initiative Questionnaire (CAIQ) for Oracle Aconex Cloud Applications

Appendix B: Oracle Aconex Professional Services – Service Description

Please refer to <https://www.oracle.com/contracts/docs/constr-eng-pro-services-5172017.pdf?download=false> for Oracle Aconex Professional Service Descriptions.

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