R4i Technical Brochure

Integrated Product Support

Pennant

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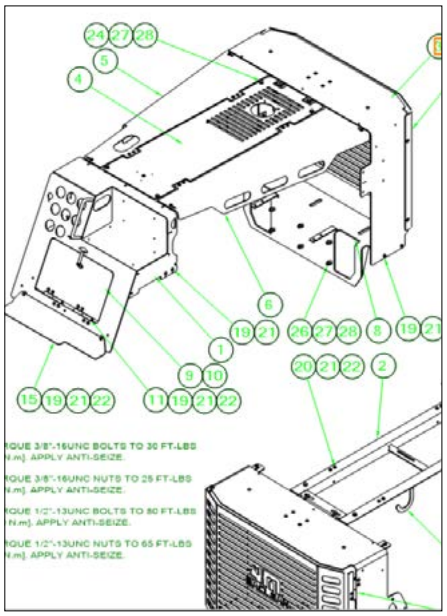
R4i S1000D Product Suite

With over a 20-year track record, the R4i Product Suite provides tools to create, manage and leverage S1000D, ATA iSpec 2200 and MIL-STD information, that is vital to the build, operation and maintenance of complex equipment.

The R4i solution:

- Provides CSDB integrated S1000D and ATA authoring options (Authoring & Content Creation)
- Assists with S1000D and ATA Project Deliverables (Management & Processing)
- Achieves Data Exchange, IETP, HTML5 and PDF publishing and distribution goals (Publishing & Delivery)



For more information and to learn more about the R4i Product Suite, visit us at www.pennantplc.com or email us at sales@pennantplc.com to schedule a demonstration.

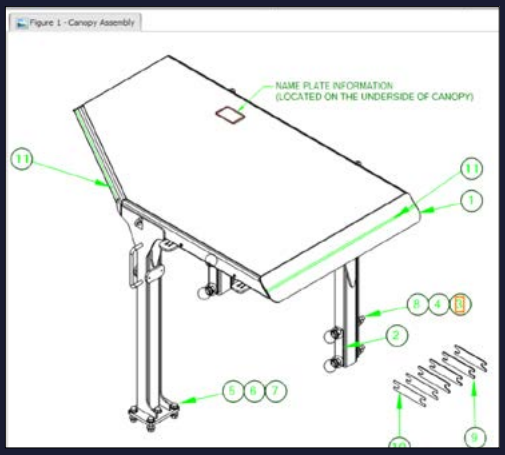
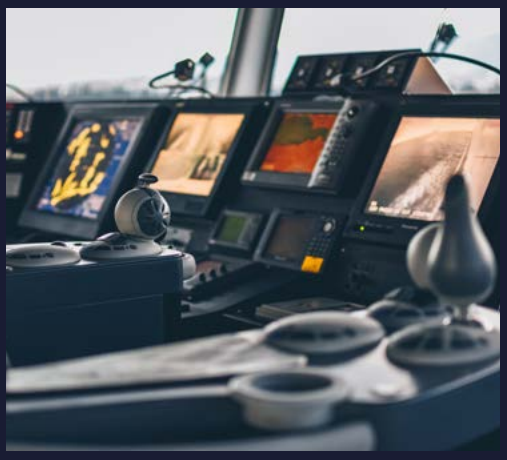


Figure 1 - Canopy Assembly
NAME PLATE INFORMATION
(LOCATED ON THE UNDERSIDE OF CANOPY)



Management & Processing Tools

CSDB Server

secure. manage. deliver.

The R4i Common Source Database (CSDB) Server enables organizations to create, manage and publish business critical content in electronic and hard copy formats.

The R4i CSDB Server® enables organizations to create, manage and publish maintenance and operational content electronically as Interactive Electronic Technical Manuals (IETMs) or as hard copy PDFs using the R4i Binder and with Change Packaging.

A Powerful Tool

The **R4i CSDB** product suite is for customers that need:

- Technical or operational information to **comply** with industry specifications, including all issues of ASD S1000D, ATA Spec 2100, iSpec 2200, iSpec 2300, MilSpec, Shipdex, Raildex, DITA and others.
- To **re-use** information across multiple platforms or projects.
- To **extend** beyond traditional paper documents in the field.
- To **deliver** content to multiple devices or formats including paper, web, touch devices, in-vehicle console, in on-line and off-line modes.

The R4i CSDB Server, via the R4i CSDB Client software, controls the versioning, publishing and management of technical data illustrations and maintenance and project data.

Powerful Features

Easy to install and fast to configure, the R4i CSDB is rich with features that ensure authors are as productive as possible to include:

- Task management allows managers to assign users with work and associated files from within the CSDB.
- Tasking allows users to view the tasks that they have assigned, including the associated files.
- Document Compare allows you to see the differences between selected internal versions of Data Modules.
- Manage Templates provides the ability to store IETM and Data Delivery templates in the CSDB.
- Global Search and Replace gives the ability to replace text globally within Data Modules. This does not affect elements, only text within the element.
- Resources Store allows you to store files that are used for the creation of your IETPs, including banners, generic images, cover pages, and other supporting files.
- Recycle Bin allows management to restore files back into the location within the CSDB that users deleted.

The R4i Difference

- The R4i CSDB Server is easy to install, manage and operate. Available to be installed on customer site or hosted in the Pennant cloud.
- Instant validation of data modules references including other data modules, images and external publications listed in the CSDB.
- Management of SGML and XML.
- Management of multiple specification versioned data in one CSDB.
- Applicability management delivered to the IETM.
- Online or Offline IETM access out in the field.
- Apply soft or hard date expiry to prevent access to outdated content.
- Incorporate “just in time” training data within the IETM.
- Support for legacy content including PDF, PPT, Word and Excel formats.
- Display of review data in history panel.
- Single Sign On (SSO) Support.

Benefits of integrating FOUR powerful tools working as one.

R4i CSDB Client with Integrated Task Management

The R4i CSDB Client is the easy to use interface for all CSDB Management. This includes job task and the generation of released content. Using the optional Media Generator module, a Data Delivery (DDN) package, HTML IETM for touch devices or IETM Package for the free R4i Viewer can all be created in minutes.

R4i Data Module Manager

The cornerstone of any ASD S1000D solution is the ability to apply business rules and manage the Data Module Requirements List (DMRL), the Data Module List (DML) and the Common Source Database List (CSL). The Data Module Manager is an integrated R4i CSDB tool used to automatically generate the projects Data Module shells and reports as required for all Issues of S1000D deliveries.

R4i Fault Code Manager

The R4i Fault Code Manager is used to record fault information about the equipment or system. All the information contained within the Fault Code Manager can be accessed within an IETM when using the R4i Viewer®.

R4i Viewer

The R4i Viewer supports dynamic presentation of SGML, XML and PDF formats, as well as audio, video and other written content.

System Requirements

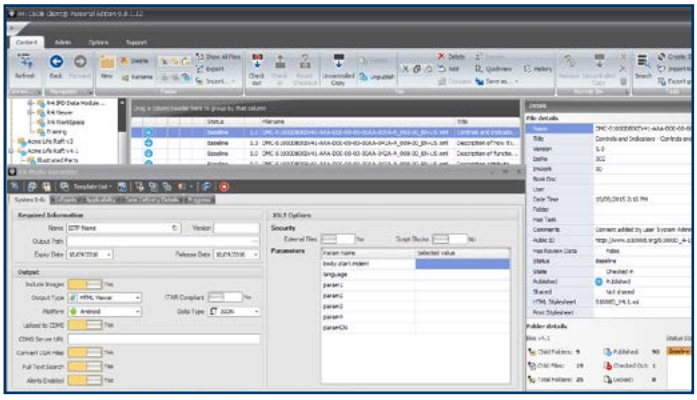
- Windows 2012 R2, 2014, 2016, 2019 Server
- Database – Microsoft SQL 2014, 2016, 2017 or 2019 (recommended) * or;
- Oracle – 12G*
- ASP and ASP.NET on IIS
- 16GB and above recommended
- 1 TB Disk space for Project use
- .Net 4.7.2 and above

The R4i Viewer is royalty FREE to distribute with IETM's generated from the R4i CSDB.

The R4i Viewer offers:

- Advanced search, including parts searching.
- A **free** CGM viewer.
- Full support for multi-directional hotspotting with CGM graphics.
- Bookmark, cookie-trail and other easy navigation capabilities.
- Support for dynamic presentation of SGML and XML data.
- The ability for maintainers in the field to provide feedback via the "Tech Note" feature, or via Comment Module with R4i ReViewer.
- Applicability management controlled in IETM.
- Online or Offline IETM access out in the field.
- Access restrictions based on set expiry dates.
- Integration of "just in time" training within the IETM.
- Support for legacy content including SGML, PDF, PPT, Word and Excel formats.
- Allow Data Modules to be found via custom DMC filtering.

R4i Viewer is also utilized by leading organizations and Defense Department's around the world, including, the U.S. Air Force, the Italian Air Force, the Australian Department of Defense and the U.S. Coast Guard.



Media Generator

design. create. deliver.

The R4i Media Generator allows you to easily generate powerful IETPs in three mouse clicks.

Build your IETPs within hours not weeks, with no programming, no scripts and no IT assistance. Anyone can use the Media Generator Tool.

R4i Media Generator creates technical and operational information that complies with industry specifications including ASD S1000D, ATA Spec 2100, Spec 1000BR, iSpec 2200, iSpec 2300, MilSpec, Shipdex, Raildex, DITA and others.

R4i Media Generator can create IETP's for the following output types:

- R4i Viewer
- HTML 5
  - Windows
  - R4i MobieTP for Android
  - R4i MobieTP for iOS
- Data Delivery (DDN)
- R4i Viewer IETP Change Package

The R4i IETP Viewers are licensed as royalty FREE to distribute for R4i Media Generator Customers. IETP's can be generated for offline use or online connected to the R4i Content Distribution Management Server (R4i CDMS).

IETP's generated for HTML have the option to automatically convert CGM images to SVG format.

Integrate just in time learning.

Seamless CSDB Integration

No jumping between multiple S1000D products – Stay inside the R4i CSDB Client to "drag n drop" IETP delivery files from within the R4i CSDB Common Source Database.

Automatically push to the R4i CDMS software for controlled distribution of your IETP's.

Integrate just in time learning packages into your IETP's.

Save time – The Templates feature provides the ability to store all of the IETPs structure and configuration settings within the CSDB, allowing for re-use later.

Reduce errors – Generated IETP's are checked during creation to ensure error free content for delivery. A report of missing and unpublished data modules and images is displayed when generating IETP's.

IETP's created with the Media Generator tool can provide operators and maintainers with real time parts from 3rd party systems when the free R4i IETP Viewer is connected to a R4i CDMS System.

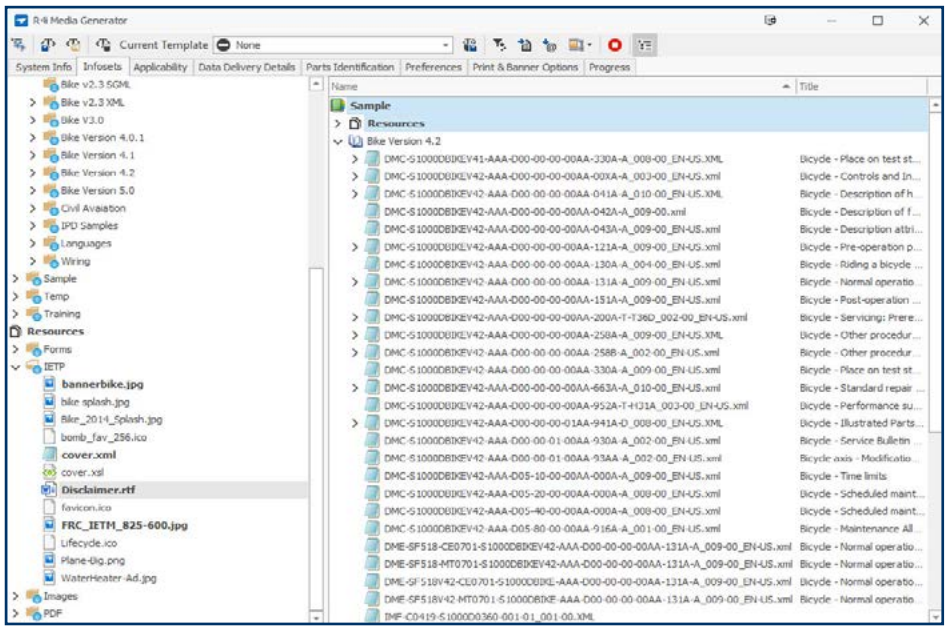
Features displayed in the R4i IETP viewers are optional and configurable via the Media Generator window, so that content generated for each customer can be unique. There are 125 configurable feature items that can be saved in Media Generator templates.

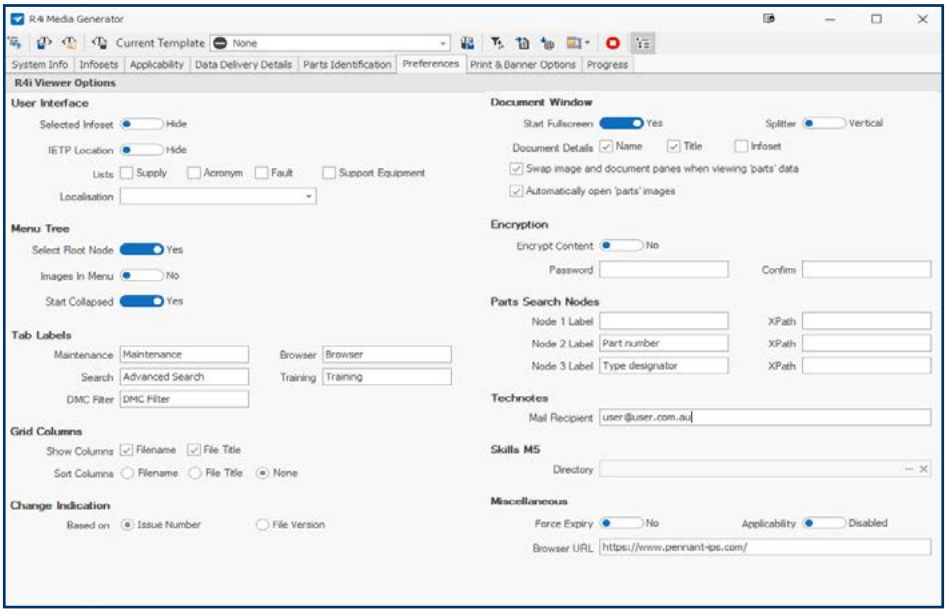
The Data Delivery option is used to issue an ASD S1000D compliant data delivery to an end customer instead of an IETP. The Data Delivery package options include:

- BREX Referencing
- Data Dispatch Note (DDN)
- Publication Module (optional auto generation)

R4i IETP Change Packages

Generate Change Packages for R4i Viewer based on Data Module Issue Number or based on internal CSDB Change Management controls of monitoring all files that have been added, deleted or modified in the CSDB since last IETP generation.





System Requirements

- Windows 8/8.1, Windows 10 (64bit Editions)

Note: Above Windows are not installed and not licenses with R4i

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- Recommended minimum hardware specifications are 4GB Ram

- Microsoft Internet Explorer V11 or higher installed on the pc

Note: Microsoft Edge is not supported

- Microsoft .NET Framework V4.5.2 and above

Note: Microsoft.Net is freely available from http://www.microsoft.com/en-us/default.aspx

DCAM Server

capture. report. improve.

R4i Data Capture, Analysis and Management (DCAM) Server allows the continuous improvement process to ensure a quality product. Whether that be usability, targeting content to users and readers, as well as the quality of content.

How it works

The captured data is stored as micro–XML DCAM Packets (DCAMP). When the R4i Application is connected to the R4i DCAM Server, DCAMP's are streamed at timed intervals for processing. When the Application is operating in offline mode, DCAMPS are stored locally until the local DCAM vault is full. When the user connects to the DCAM Server and is online, the DCAMP micro files are streamed to the DCAM Server for processing.

There are three components to DCAM

DCAM Agent. The DCAM Agent is a software engine that is part of all R4i IETP Viewers. The Agent collects the user IETP interaction data, connects to DCAM server to transfer the DCAM data to the DCAM Server via secure Internet Web Services.

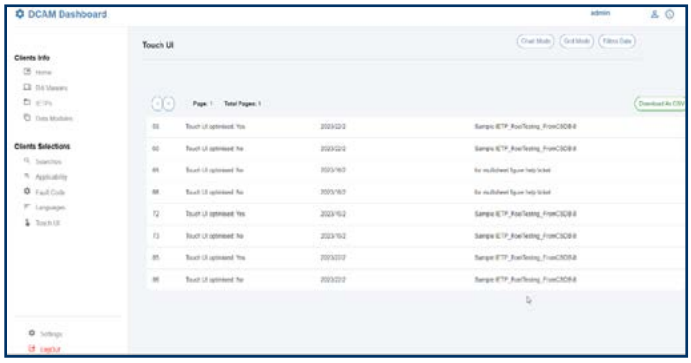
The DCAM Server parses the uploaded DCAMP micro files and collates the data into the DCAM SQL Database, ready for the DCAM Console to analyse, manipulate and then present the data to the DCAM Operator.

DCAM Console. A web browser application, the console accesses the DCAM SQL database and presents the collated end user data. The console operator can run standard (included) reports.

What's being recorded/reported:

Every user interaction and click inside the R4i Viewer is being logged, including but not limited to:

- Successful and failed IETP logins
- The windows user details (offline IETP)
- Software version
- Device utilisation
- Touch UI activated
- IETP publication accessed
- User searches/failed search
- Viewed Data Modules
- Viewed Illustrations
- Length of session
- Links opened/viewed
- Forms accessed
- Logged out
- User interface language selection



Task Manager

task. track. measure.

Enhance project control and task progression with R4i Task Manager Server, the integrated productivity tool which ensures teams can access and assign work tasks to local and global assets.

R4i Task Manager Server

The browser based **R4i Task Manager** Console provides a clear view of task status and history. The R4i Task Manager brings flexibility, speed, tracking and reporting to multiple project tasks, ensuring one global view of all tasks.

R4i CSDB Integration

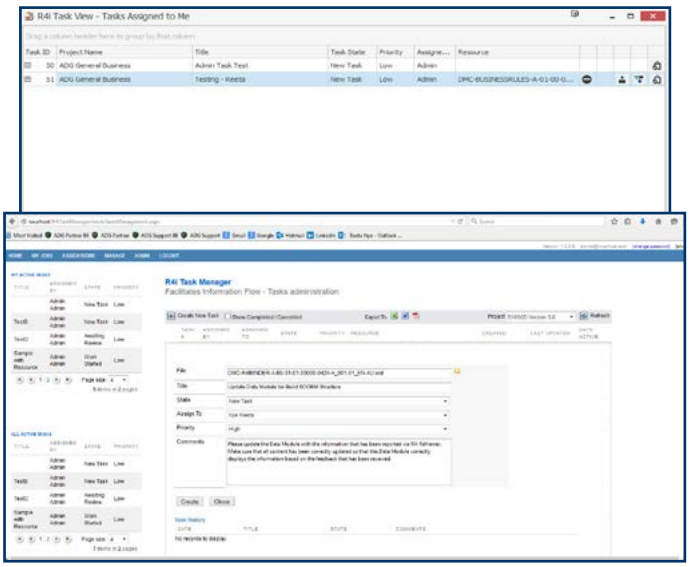
The R4i Task Manager includes direct integration into the R4i CSDB Server database, enabling data modules and illustrations to be linked to tasks for assignment.

Multiple Project Support

Setup one major project or many smaller ones with internal and external users assigned to one or more project. Only users assigned to the same project can assign, view and action tasks within that project.

The Task View Plug-in

Users are seamlessly connected to the R4i Task Manager portal via the R4i Task View PC Plug-in for Windows 8 and 10. The Task View monitors the R4i Task Manager Server for new tasks and any status change to existing tasks.

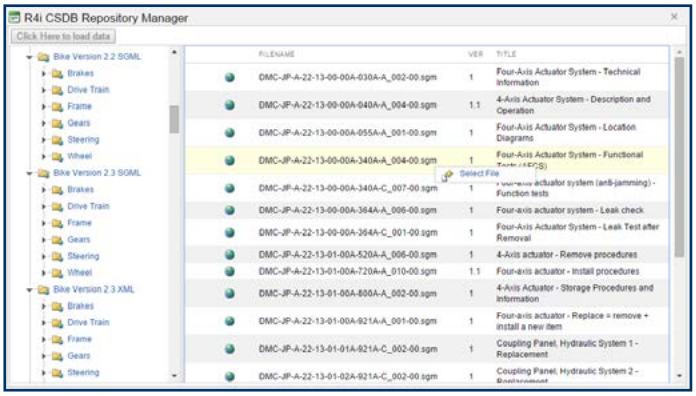


Benefits of R4i Task Manager

- **Fast Setup** – Easy to configure custom Tasks and Workflow.
- **Multi-Project Management** – Manage multiple projects and multiple tasks within those projects.
- **User and Group Profiles** – Users can be assigned to job roles and group profiles as part of the project configuration.
- **Flexibility when assigning files** – Browse directly into the R4i CSDB to assign tasks to objects or point to external objects in other SQL databases.
- **Instant task notifications** – Job alerts pop-up in users' desktop systems tray via the R4i Task View PC Plug-in.
- **Save time** – One click check-out of the assigned task document from the R4i Task View tray.
- **Project Reports** – Monitor, track and report on each task and its stage in the job cycle.

R4i Task Manager has a robust ability to:

- Enable the Assign Task modules to be filtered by priority and assignment.
- Export the data to Microsoft Excel, Word and/or Adobe PDF.
- Support direct integration into the R4i CSDB.
- Link Data Modules and Illustrations to the created tasks.



BREX Validator

check. validate. report.

The R4i BREX Validator is a tool that can be used to validate Data Modules and Publication Modules against a Business Rules Exchange (BREX) module. This tool allows you to validate any XML S1000D module against any BREX of the same specification version, not just the BREX that has been referenced in the Identification and Status section.

R4i BREX Validator verifies information that is contained in the delivered data modules, against the projects Business Rules (BREX) including a layered BREX.

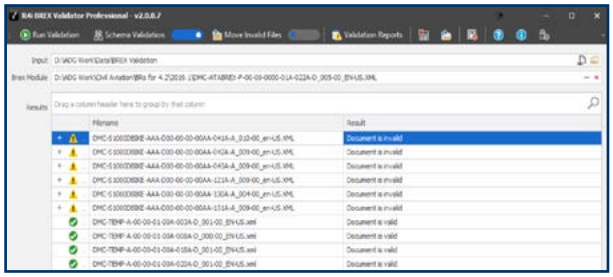
FREE to Use

The R4i BREX Validator installs ready to start validating your content. The free version (R4i BREX Validator Standard) of the BREX Validator validates a single Data Module at a time.

R4i BREX Validator Professional

When a license has been applied, the functionality will change from single file validation to batch file validation (R4i BREX Validator Professional). With an active license, users will have either a specific number of files that can be validated or an expiry date, depending on the requirements of the licensing.

The BREX Validator will validate any S1000D XML Data Module. When validating, you must ensure that you have selected the appropriate version of the Data Module and BREX to run the validation. If you have selected a v3.0 Data Module and a v4.0 BREX the BREX Validator will display a version mismatch message.



Another time saving product available within the powerful R4i Suite!

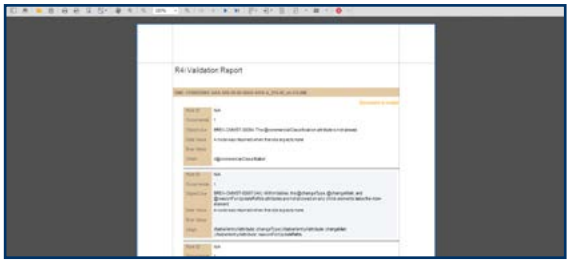
The R4i BREX Validator has the following functions available:

- Run Validation - this will start the validation process.
- Schema Validation - provides the ability to validate the schema of the files.
- BREX validation - Support for layered BREX checking.
- Move Invalid Files - when this is enabled files that fail the validation will be moved into an Invalid folder.
- Clear Results - this will clear the results panel
- Open Input Folder - this will open Windows Explorer to the input location
- Validation Reports - Full, Failed and Developer Validation Reports in Professional Edition

System Requirements

The R4i BREX Validator requirements are as follows:

- Microsoft .NET framework — version 4.5.2
- Minimum screen resolution - 1024 x 768
- Windows 8 (64bit Editions), Windows 8.1 (64bit Editions), Windows 10 (64bit Editions)
- 2GB of System Memory
- 70MB available disk space
- 2.8Mhz x86 or x64 Processor (CPU) or higher



DMX (Data Module eXchanger)

transform. validate. deliver.

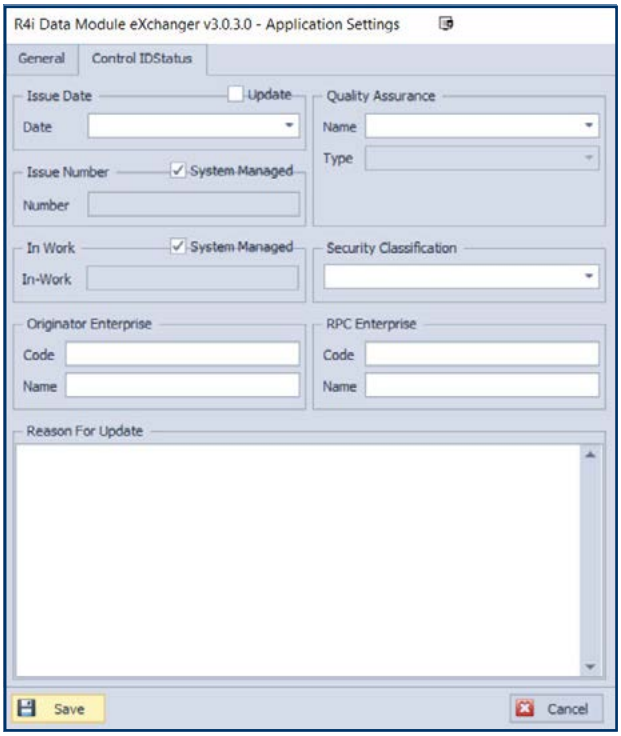
Automatically convert your legacy 2.x and 3.x S1000D content to 4.x.

Faster, Easier S1000D Content Conversion

R4i Data Module eXchanger (DMX) provides an easy way to convert your legacy S1000D content to the newer versions. The processing engine can handle conversion from both SGML and XML legacy S1000D content. R4i DMX dramatically reduces the manual work effort involved in migrating to a new version, while ensuring project decisions for the v4.x series is configured.

As part of the conversion you can configure information contained within the Identification and Status Section, including assigning a specific BREX to be compliant to during your conversion.

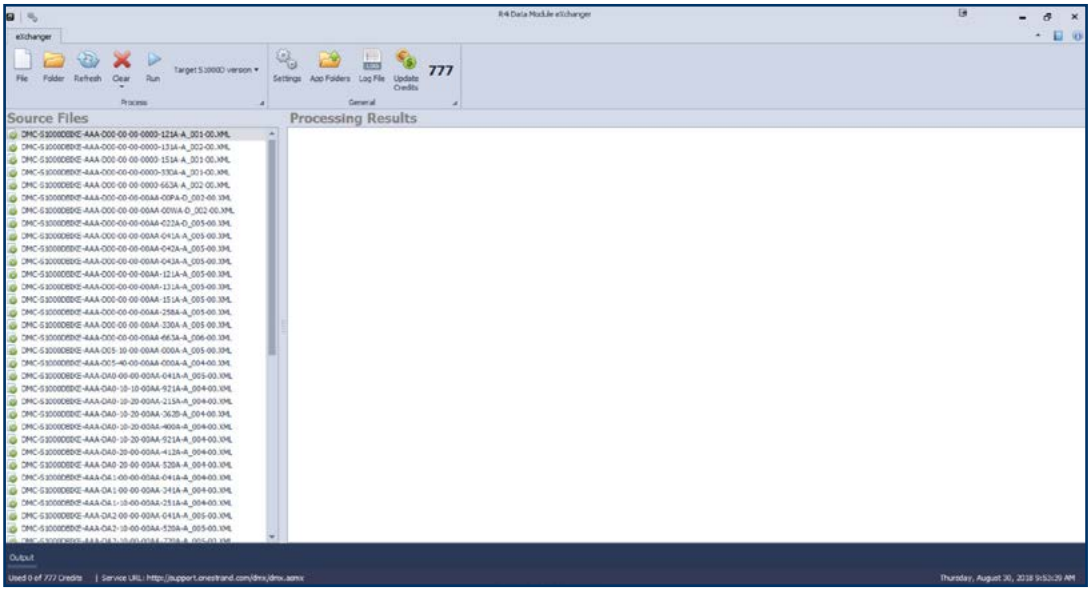
R4i DMX is licensed via Credit Packs purchased as required for conversion. Simply login to the support portal with R4i DMX and current credits available will be shown. During conversion, only content that is output as a valid file will be deducted from the credit balance. If the file fails to convert to a valid file there is no charge and the error results are reported.

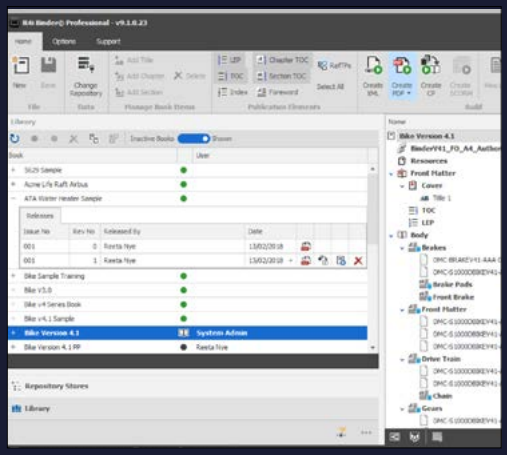


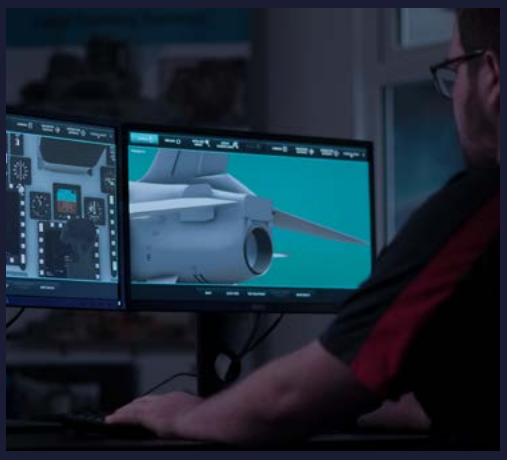
Need to convert v4.0 to v4.2?

Yes, R4i DMX does that too! Refer to the chart on exactly what versions of S1000D will automatically convert.

Convert from S1000D Issue number			Convert to S1000D Issue number		
2.0	SGML	XML	4.0	4.1	4.2
2.1	SGML	XML	4.0	4.1	4.2
2.2	SGML	XML	4.0	4.1	4.2
2.3	SGML	XML	4.0	4.1	4.2
3.0		XML	4.0	4.1	4.2
4.0		XML		4.1	4.2
4.1		XML			4.2







Publishing & Delivery

Binder Suite

design. define. publish.

R4i Binder is a powerful productivity tool for organizations that require paper publications. Its flexible drag and drop capability that simplifies the creation of manuals, handbooks and large technical books.

R4i Binder brings flexibility and simplicity to the production of paper publications, enabling users to build complete PDF books that include cover pages, hyperlinked tables of content and hyperlinked indexes.

R4i Binder Professional is an optional module that integrates with the R4i Common Source Database (CSDB) Server (see separate brochure).

How it works

R4i Binder accesses structured content (for example, content that conforms to the ASD S1000D, ATA, and DITA specifications) that is held in the R4i CSDB Server's database. It processes this content using stylesheets (also known as XSL-FO Stylesheets).

R4i Binder can utilize any XSL-FO stylesheets designed for any print standard. This includes the traditional Chapter/Section style publications, through to the more modular print style utilized in the ASD S1000D specification, used by defence and aerospace.

Easy to use, R4i Binder users simply design the layout of their publication by dragging content from the Common Source Database (R4i CSDB) view, into their Book layout view.

If you already have a DITA map or Publications Module for your print structure, simply drag that file across to Binders Book Layout View and the required book structure and files are automatically added.

The book structure can then be saved to the library and a stylesheet selected to produce the PDF publication.

Benefits of R4i Binder

- **Save money with one tool for publishing legacy data, ATA and S1000D** - R4i Binder can publish both SGML and XML content, based on any DTD or Schema specification.
- **Zero Scripts required** - No programming or development knowledge is needed to publish content. Use the powerful drag and drop functionality to build customized manuals, handbooks, operating procedures and maintenance procedures.
- **Ensure only latest released Data Modules are published** - With direct access into the R4i CSDB, the integration ensures only authorised and released documents can be added to the book production in Binder.
- **Save time on book set-up and production** - Pre-build and save book layouts for fast, consistent publication creation.
- **Audit Compliance with release library management** - R4i Binder's Book History feature retains a copy of every book PDF and Change Package (with Change Package module licensed) that has been published and released in the library, including official "release date".
- **Save Time and Money by continuing to use current XML/SGML Authoring Tools** - No need to spend money on new software and re-training personnel in new authoring tools, as Binder works directly with the SGML or XML content.
- **Need to publish the same content with a different style** - Save your preferred stylesheet with a book configuration, or select a new one as required.
- **Single Sign On (SSO) Support.**

Don’t have access to the R4i CSDB, but want the R4i Binder capability?

R4i Binder Personal has the same great features, and works with our powerful DM View that allows you to store your content in a virtual database.

Change Packaging module for R4i Binder

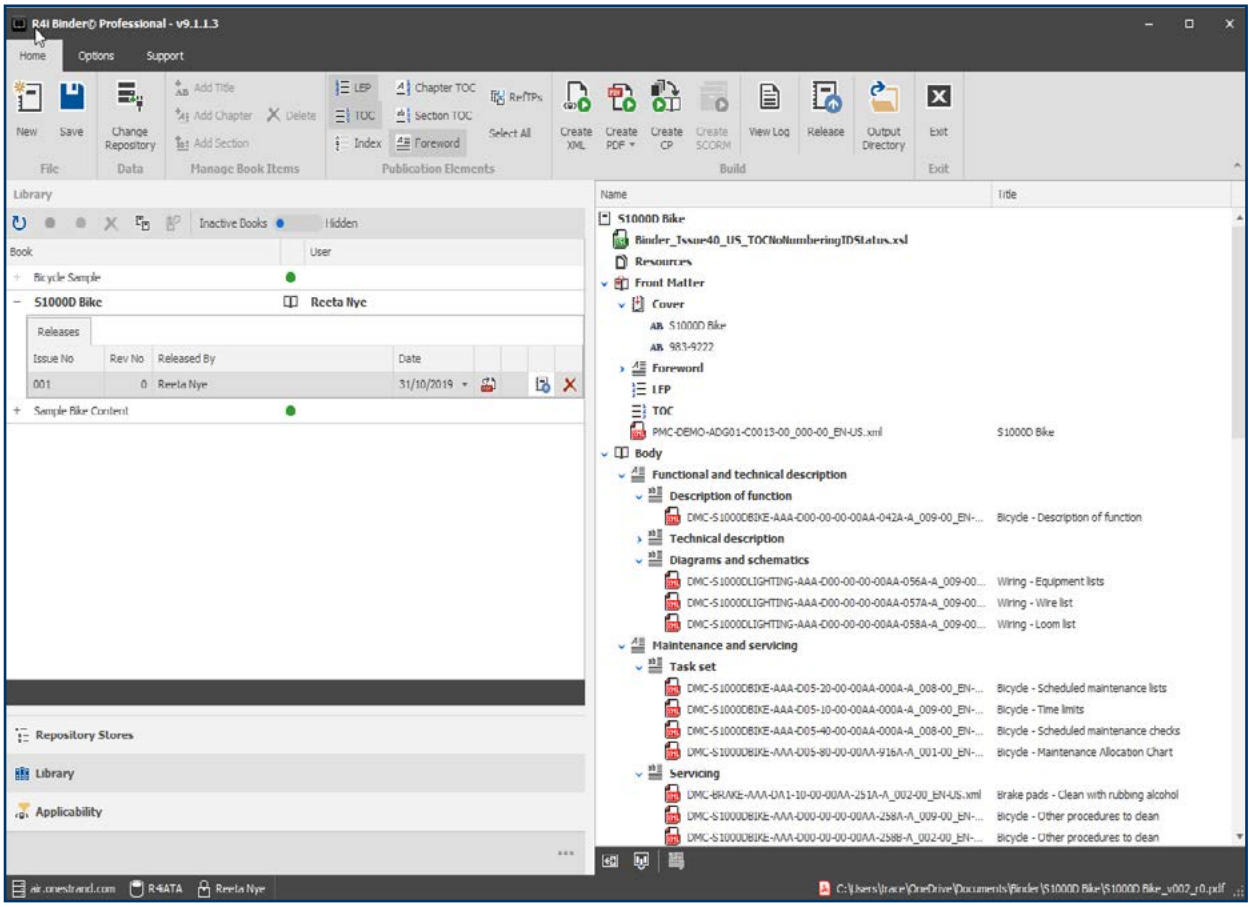
To extend the reach of R4i Binder, a change packaging module is also offered. The change package module allows the authoring team to create change/revision packages in a matter of minutes, compared to the weeks that it can take to manually produce these changes.

The benefits of using R4i Binder with Change Packaging include:

- **Save hundreds of thousands of dollars in people hours** - With automated changed package production.
- **Reduce authoring time** - R4i Binder can produce change packages with or without change mark-up in content, by using the R4i Binder differencing engine.
- **Outputs ‘changed pages’** automatically, with or without change bars displayed (depending on style preference)
- **Automatic generation** of files that reflect changed pages, including:
  - Table of Contents
  - List of Figures
  - List of Tables
  - List of Effective Pages
  - Revision History Sheet
  - Index page

SCORM module for R4i Binder Professional

- **Re-use Technical content** - The training team can drag and drop learning modules and combine them with the technical content in data modules to quickly produce a PDF training guide.
- **Save weeks of time and output same content to SCORM** - Take the same book designed for PDF in Binder, add SCORM attributes and export as an eLearning SCORM PIF. It is as easy as that!



CDMS with MobieTP

publish. distribute. control.

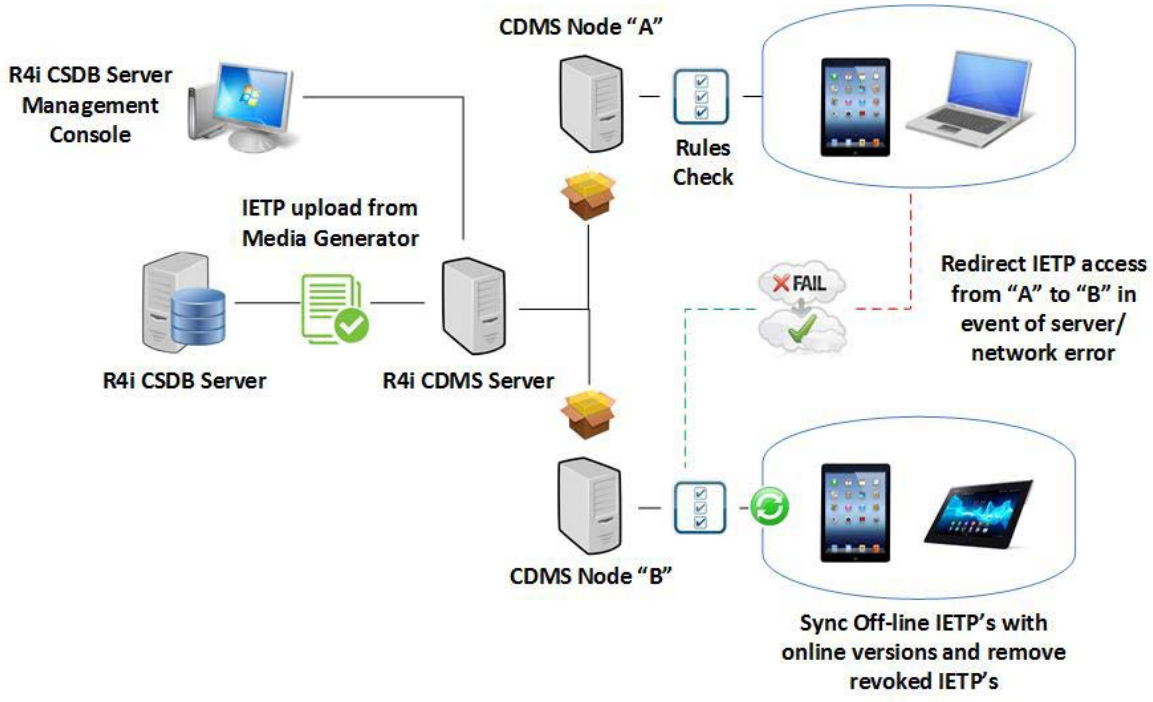
The R4i Content Distribution and Management Server (CDMS) is an IETM Distribution Ecosystem that provides information publishers with control of the distribution lifecycle of their online and offline content.

The **R4i CDMS** is designed specifically to make the deployment and maintenance of IETM content easy for Publication Managers without needing assistance from the IT department. The R4i CDMS system is made up of the CDMS application and CDMS nodes. The use of multiple CDMS nodes is recommended when large deployments of IETM's with R4i Viewer and R4i MobieTP are expected.

Authorized content is generated in the R4i CSDB and uploaded to the R4i CDMS for distribution based on rules selected by the publishing team. The rules include content access, online or offline access and content expiration. Superseded IETM's can be automatically removed from Windows and Android devices.

Using the browser based CDMS Administration console, IETM Websites, offline IETM packages and software updates are deployed to selected CDMS Nodes. Deployment options are then selected based on the organizations requirements, offering the following benefits:

- **Reduce IT staff load** - The IT department can redirect access to online and offline IETM's to different servers without Viewer users needing to change web addresses or network share names.
- **Stage IETM's** – Stage one or more IETM's on CDMS Nodes and only make them visible to R4i Viewer and R4i iOS and Android MobieTP Viewers when ready.
- **Easy IETM Access** – Viewer users can select how they want to access IETM's. Users can access IETM's locally, on a network drive or a web server. Users never need to know web addresses, network shares or where the IETM is stored locally.
- **SVG Support with Hotspots** – Distribute touch screen friendly, high resolution illustrations from CGM source formats.
- **IETM Updates** – IETM's can change. To avoid users needing to download updated full IETMs, small change packages can be deployed to update the existing local IETM.



- **Maximum Availability** – To ensure technical information is always available, the R4i Viewer seamlessly reconnects to one or more CDMS nodes in the event of a server or network failure.
- **Total Control** - Distribute full IETM's and change packages to one or more Internet distribution points without any IT department assistance. Define how IETM's are accessed, removed and updated on PC's and Tablets.

The user only sees a "connect" option in the R4i Viewer and R4i MobileTP applications, but where they connect, what they see, and what they can do with the IETM content is controlled via the R4i CDMS Management console. If enabled, the user can choose to browse online or download and load IETM's onto their Windows or Android Device.

Leverage your technical and operational content with the S1000D R4i IETM Viewers for Windows, R4i MobieTP for Android and R4i MobieTP for iOS devices.

R4i MobieTP for Android and MobieTP PLUS for iPad

The R4i MobieTP app is a royalty-free application for Android and iPad users. Mobile IETPs free technicians, operators and crews from desktop PC's and bulky laptops at minimum cost to an organization.

The R4i MobieTP Viewer for Android and iPad utilizes single source IETP packages generated from the R4i CSDB Server, including support for applicability. IETP packages are generated from the R4i CSDB Media Generator which are in turn 'read' by the R4i MobieTP on Android or iOS devices.

Optimized for small screens and large files, the native Mobile IETP Viewer is simple to use and can access content in both online and offline modes on Android and iOS devices.

The R4i CDMS resides between the R4i CSDB and the IETM end user and manages IETM package downloads and access.

The MobieTP application supports SVG graphics which are converted from CGM when the IETM is created. Referenced PDFs and multimedia files are also supported.

R4i Viewer for Windows

A royalty-free IETM viewing application for Windows PC and tablet users. The R4i Viewer is an intelligent content access tool that provides operators and maintainers with an interactive and unified view of manuals, e-learning courseware and maintenance job tasking.

IETM packages are generated from the R4i CSDB Media Generator which are in turn 'read' by the R4i Viewer.

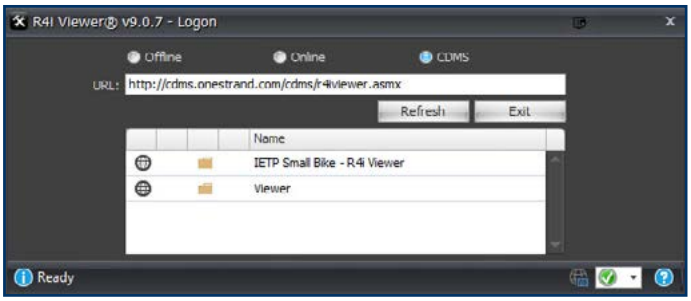
The R4i Viewer supports the dynamic presentation of any SGML, XML and PDF formats, as well as images, audio, video and written content.

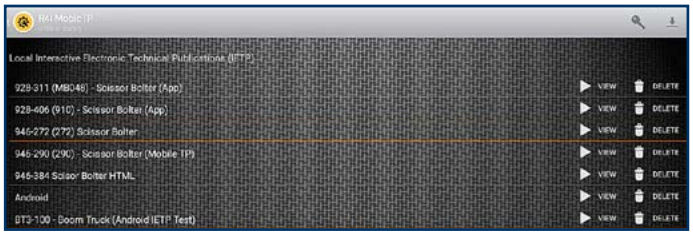
The R4i Viewer operates in online real-time mode connected to the R4i CSDB and standalone offline mode.

The R4i Viewer for Windows can be started in two user selectable modes:

- PC Mode - which is optimized for large PC screens and laptops with a keyboard and mouse; or
- Tablet Mode – which is optimized for Windows 8.x/10 tablets and is designed for human "touch" operation.

The Viewer user can easily be switched between either mode at any time.





ReViewer

validate. report. review.

Expedite and streamline your IETM review process, with R4i ReViewer. A clever review tool inside the R4i Viewer that ensures faster document review, with tracking and automation.

Robust Quality Review Process

R4i ReViewer is a built-in intelligent review tool set that activates with a license key in the R4i Viewer software. This tool allows engineering, logistics and Project Office personnel to check and review content within the full context of an IETM.

The R4i ReViewer allows customers and/or subject matter experts to review, mark up, comment and send a complete documentation set in a working interactive IETM.

This tool set allows for a more robust streamlined quality review process with no longer needing to manually mark-up paper printouts.

More importantly, this non-proprietary review tool removes the need to email PDFs of entire chapters or specific pages (with little context), to customers or subject matter experts for their review.

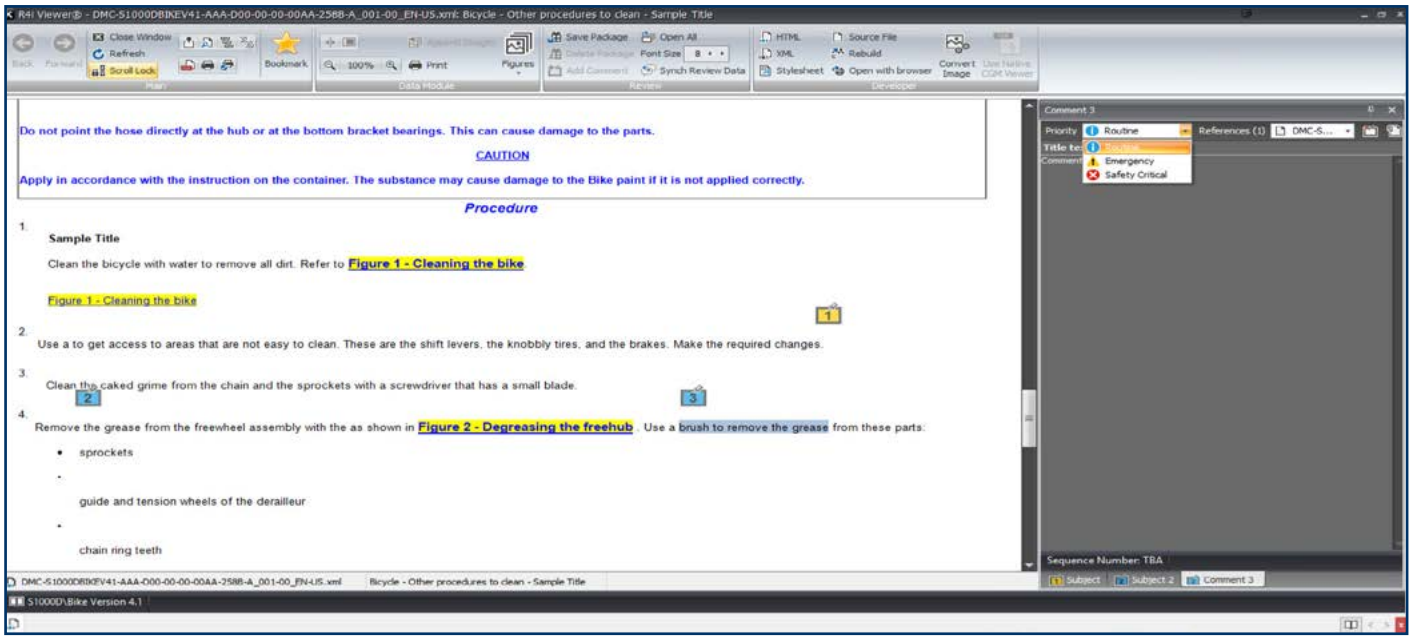
Unique 'sticky notes' feature

We are the first Vendor to output review feedback to the S1000D Specification Comment Module with this 'sticky notes' feature.

In your IETM content, sticky notes that contain comment information can be added.

After a sticky note is added against the content, then:

1. Save the note as a Comment Module for storing in the Common Source Database (CSDB) for audit and traceability.
2. Save all notes and issue the Review Package to the original OEM/Supplier to import the Review Package into the R4i CSDB.
3. Authors will then have the ability to view the Review Package in the R4i CSDB while updating content.

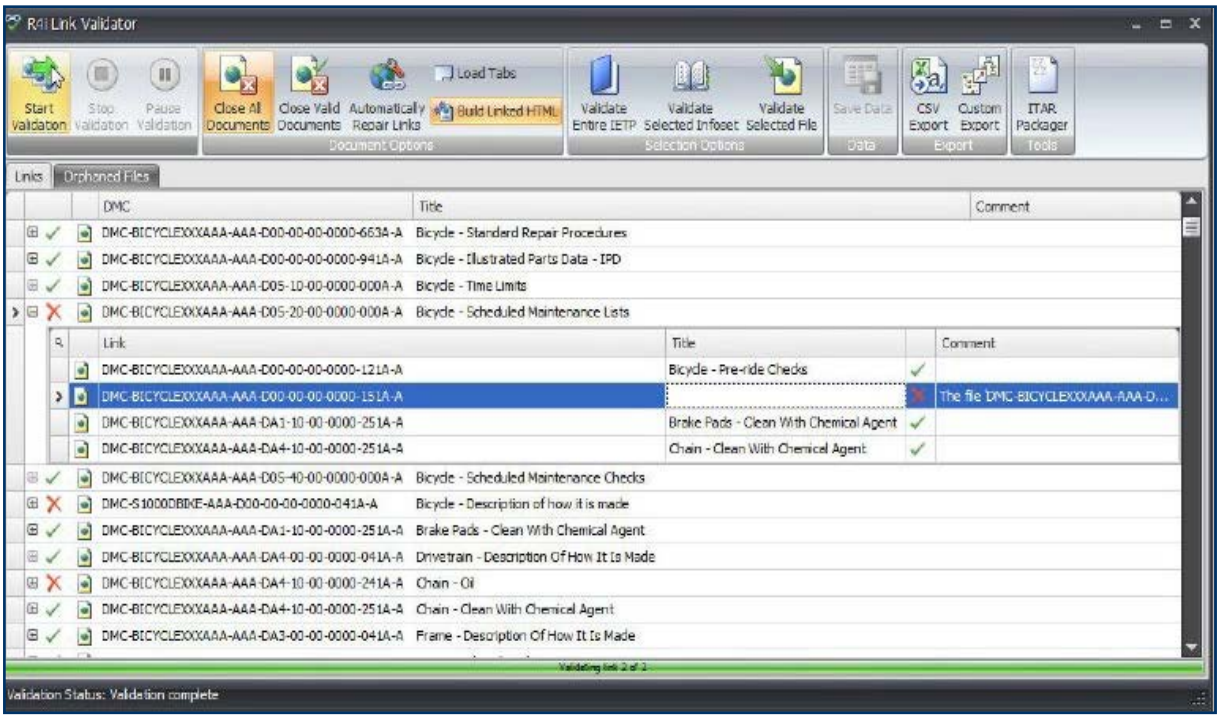


Benefits of using R4i ReViewer

R4i ReViewer leverages key viewer technology including IETM expiry, content encryption and ITAR data protection. It also includes a CGM viewer and customizable IETM user presentation.

Benefits of using R4i ReViewer include:

- **Context.** Reviewers have access to the entire IETM as it will be delivered to the maintainers in the field (in on-line or off-line modes). This gives context to what is being reviewed.
- **Fast turnaround.** Reviewers can quickly and easily comment on the data modules on screen to return them back within the IETM content. If running in Online mode, the comments will submit directly into the CSDB.
- **Electronic tracking.** Electronically tracking of comment module/changes and who requested each change in the R4i CSDB.
- **Document history.** Gain a full document history of internal and customer comments that are electronically tracked in the R4i CSDB.
- **Change data.** Change Data delivered in the IETM will include any Interim Response and Final Response Comment Modules for easy audit by Review Teams.
- **Link validation.** Clicking on every image link and Data Modules references to confirm the IETM is ready for delivery, is no longer required. The Link Validator will validate that all references (hyperlinks) to images, data modules, PDFs or internal references, to ensure all are working and will generate a report of any Data Modules that have failed and why. The Link Validator will also identify any content in the IETM that is orphaned (no longer required).
- **Export to PDF.** Review teams often prepare a PDF version of the Data Modules with images that changed in the IETM delivery. This Export to PDF feature will output a complete Data Module to PDF with just one click.
- **Encryption.** After all the reviews and checks have been performed with the R4i ReViewer tool set, the IETM is ready to deliver to the field. This Encryption feature will encrypt the content to deliver fully protected data.



Viewer

free. smart. secure.

Organisations worldwide utilise the royalty-free online and offline IETM R4i Viewer, gaining advanced publication generation capabilities.

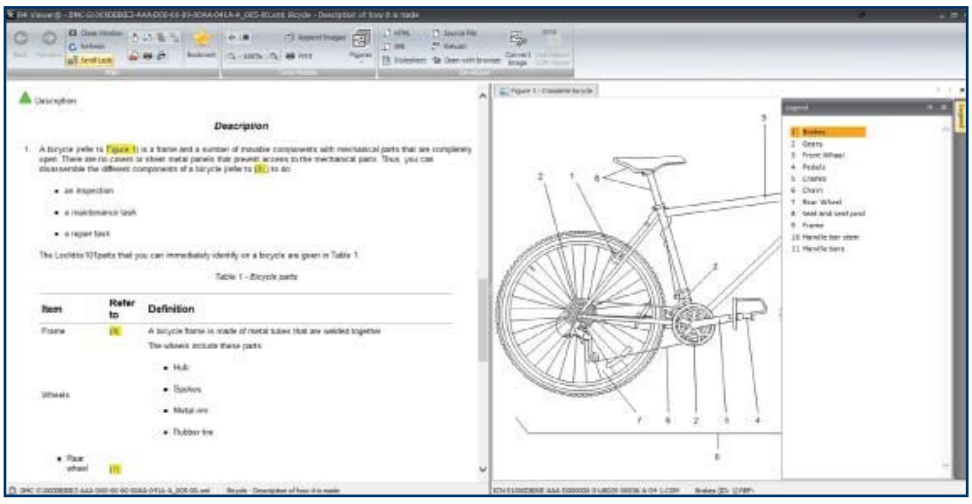
Defence, aerospace and heavy engineering organisations need to provide maintainers and systems operators with authorized, accurate and integrated information to ensure the safe and efficient operation of complex systems.

The R4i Common Source DataBase (CSDB) Server outputs content for this smart, installable Viewer for the Microsoft Windows platform. The R4i Viewer® is licensed as royalty FREE to distribute for R4i CSDB Server® Customers. R4i Viewer® supports the dynamic presentation of SGML, XML and PDF formats, as well as audio, video and other written and graphical content.

Advanced Publication Capabilities

The R4i Viewer® enables companies to leverage the R4i CSDB Server's® advanced publication generation capabilities and options, including:

- The ability to generate IETM change packages based on issue number within S1000D Data Modules or based on R4i CSDB Server® monitoring change.
- Advanced control of the IETMs interaction and presentation to the maintainer, including switchable interface to "touch friendly" tablet setting.
- Auto-generated acronyms, support equipment and parts and consumables lists, using content derived from Procedural Data Modules.
- Control content and technical information security via data encryption and IETM expiry.
- Pre-select preferred language for Viewer or toggle to switch language interface mid-session.
- Display information based on applicability, including combinations such as tail number, vessel name or model variant.
- Integrated 2D and 3D graphics support.
- Support for observed and detected fault codes, reducing system downtime.
- Advanced Illustrated Parts catalog display including integration into stores ordering systems and multi directional linking between parts lists and image hotspots.
- Configurable Landing Pages inside R4i Viewer®, including an image with hotspot zones to give users a short cut to specific Data Modules, Images and/ Folders.



Benefits of using the R4i Viewer®

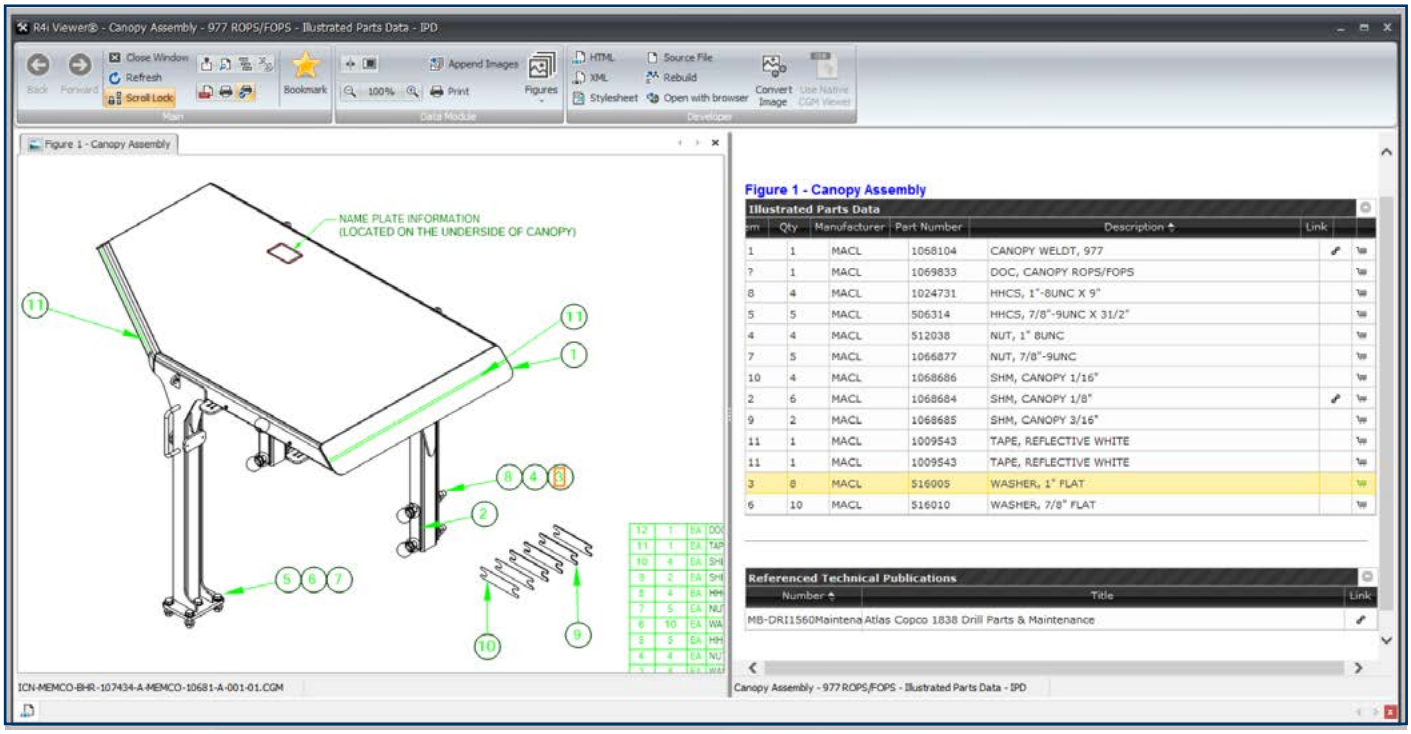
The R4i Viewer is royalty free to distribute with content published from the R4i CSDB Server®.

Benefits of using R4i Viewer include:

- Advanced search, including parts searching.
- A free CGM viewer capability with Cortona 2D/3D Viewer.
- Full support for multi-directional hotspotting & legend data with CGM graphics.
- Enhanced <multimedia> support.
- DME Prefix support.
- Bookmark, cookie-trail and other easy navigation capabilities.
- Support for dynamic presentation of SGML and XML data.
- Applicability management controlled in IETM.
- The ability for maintainers in the field to provide feedback via the “Tech Note” feature, or via Comment Module with R4i ReViewer.
- Online or off-line IETM /CDMS access out in the field.
- Apply soft or hard date expiry to prevent access to outdated content.
- Incorporate “just in time” training within the IETM.
- Support for legacy content including PDF, PPT, Word and Excel formats.
- Allow Data Modules to be found via custom DMC filtering.
- Single Sign On (SSO) Support.

R4i Viewer is also utilized by leading organizations and Defense Department’s around the world.

The U.S. Air Force Grid, U.S. Coast Guard Network and the Australian Defence Restricted Network has approved the R4i Viewer for use.



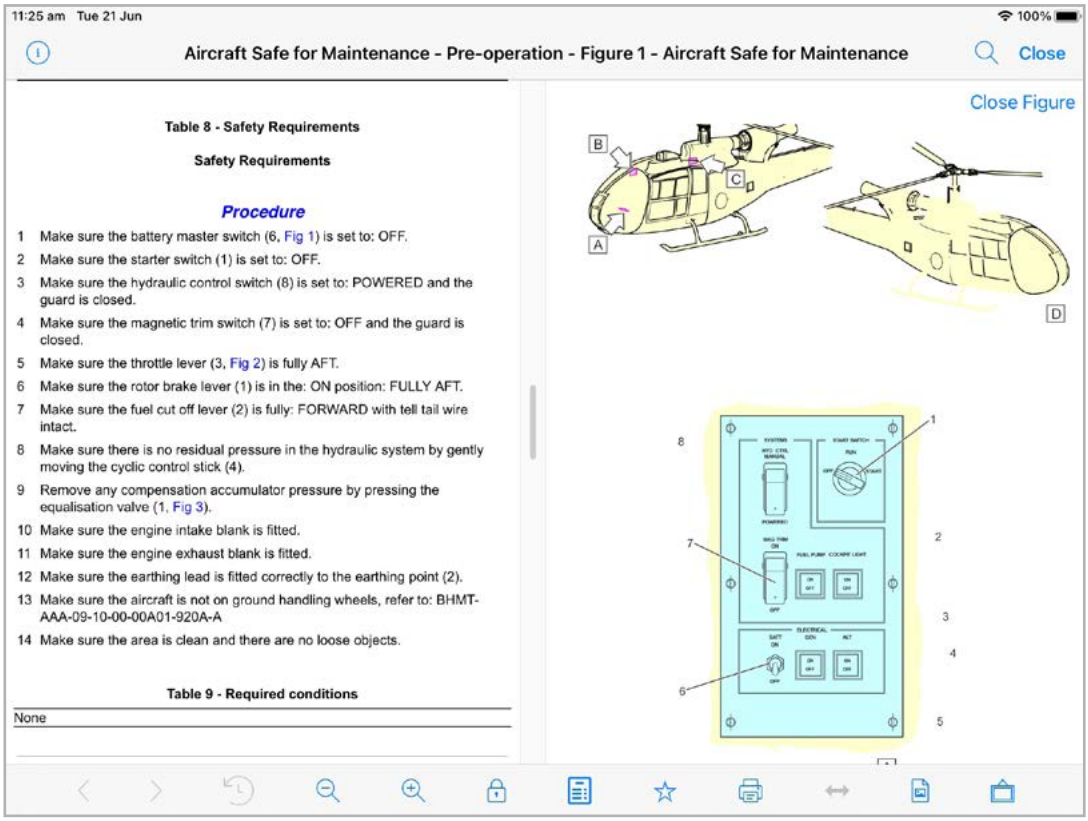
R4i MobieTP PLUS for iPad

publish. distribute. control.

R4i MobieTP PLUS is part of the R4i S1000D/ATA Publishing suite from Pennant. R4i MobieTP PLUS enables Interactive Electronic Technical Publications (IETP's) to be downloaded and viewed on iPad. Designed specifically for pilots, operators and maintainers, R4i MobieTP PLUS provides a fast, interactive user experience while providing access securely to technical and operational information.

Standard features include:

- Deliver Bulletins to the iPad which can be read offline
- Works with S1000D SGML and XML from 1.7 to latest
- Local (offline) Library ensures content is always available
- Support for PDF, Excel and Word documents
- Operator feedback via TechNote feature
- Book marking of documents
- Native SVG Graphic support
- Full Text Search
- Printing via AirPrint
- List of Support Items
- Split screen support
- Pinch Gesture support
- Data Module Code filter
- Fault Code Console
- Dark Mode support
- Scroll Lock



WebView

connected. portable. secure.

R4i WebView adds hardware and software portability to your Interactive Electronic Technical Manuals (IETM) distribution.

Maintainers and operators can access technical information directly from the R4i Common Source Database (CSDB®) regardless of the devices operating system or browser type.

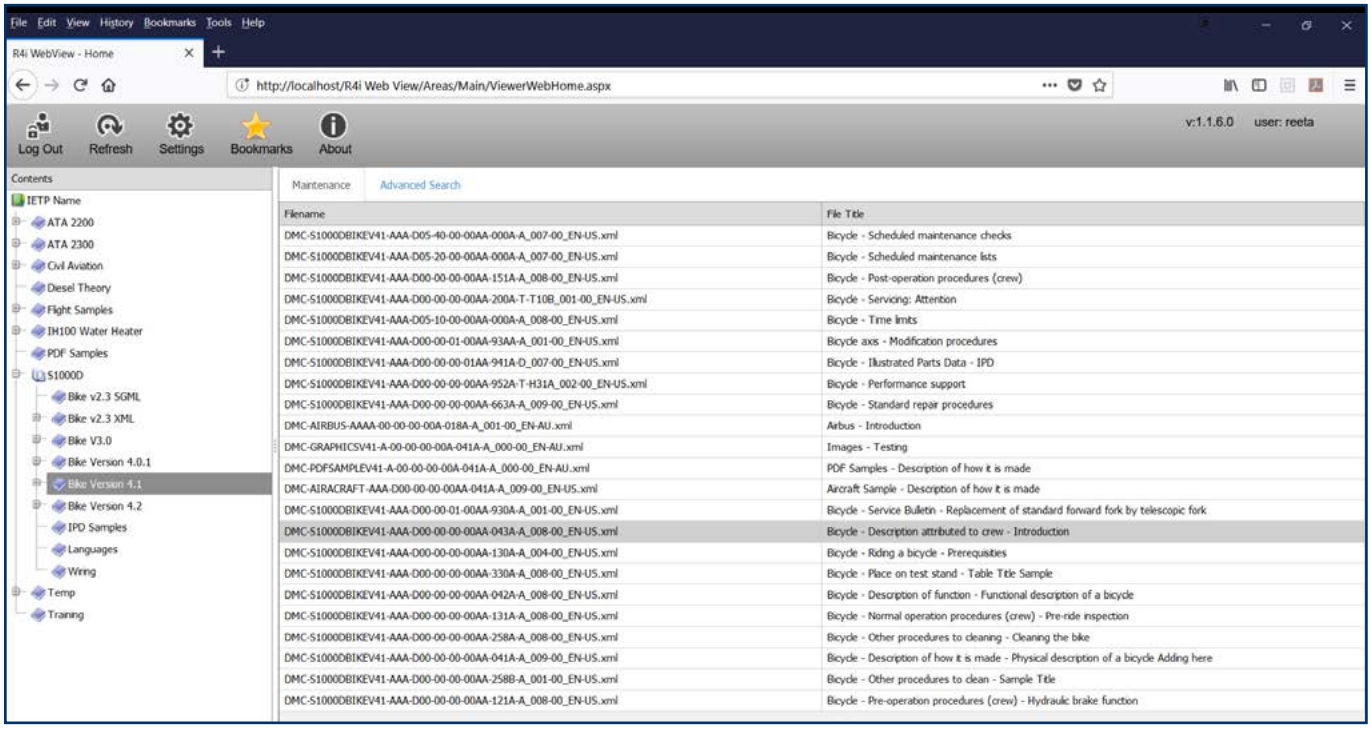
Integrated with R4i CSDB Server, access to content within R4i WebView is managed by the publishing team. The **R4i WebView** displays the information in real-time including images and PDF files. As a module available in the R4i S1000D software suite, the R4i WebView includes unlimited users per server.

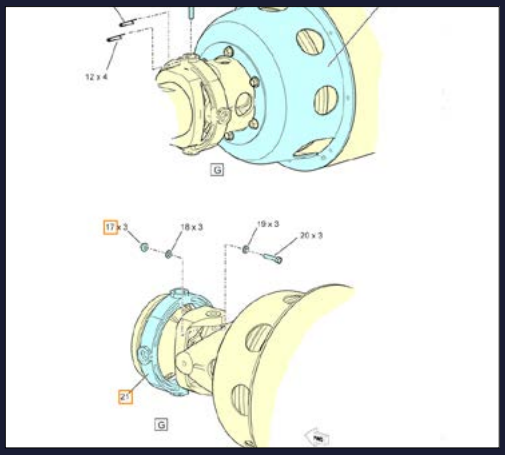
A scalable solution, R4i WebView connects directly to the R4i S1000D CSDB via a web browser, without the need for 3rd party plug-ins.

R4i WebView offers flexible support for:

- Both XML and SGML content
- All S1000D DTD/Schema types from v1.7 to 5.0
- Viewing S1000D, MIL-STD and ATA iSpec data
- Dynamic conversion of CGM to SVG illustrations with hotspots
- IE, Firefox, Chrome, Edge and Safari compatible
- User access control and content security

Microsoft Internet Information Server running on Windows Server 2012, 2012 R2 or 2016, powers the R4i WebView system. We also recommend 16 GB of system memory.

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Authoring – Content Creation Tools

R4i Writer

connect. create. validate.

R4i Writer is the most advanced XML Authoring Tool for Technical Writers required to create mission critical content. Write S1000D and ATA data modules faster with drag & drop references, automatic hotspots and live document previews.

R4i Writer is optimized for the S1000D and ATA data formats and installs "Ready to Write" with schema's and stylesheets for S1000D version 2.0 to latest XML included. For ATA the Page Block and Task structures are included. Fully integrated with the R4i CSDB, writers can now easily create high quality operational and maintenance information for PDF, HTML and IETP delivery.

The fastest and easiest way to create S1000D and ATA compliant content.

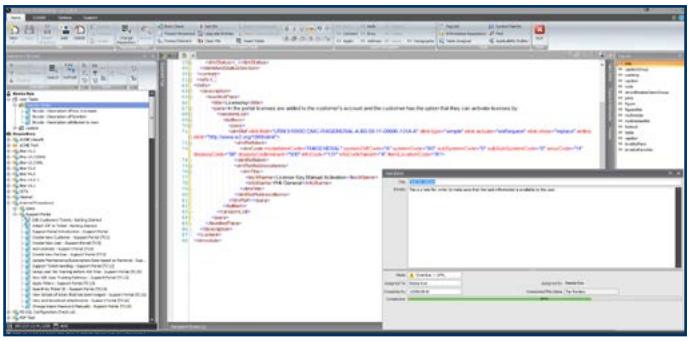
R4i Writer® allows authors to work in a native XML authoring environment while accessing content and resources directly from the R4i CSDB Server®.

R4i Writer includes IETM preview and PDF publishing capabilities, eliminating the need for authors to use multiple S1000D and ATA tools.

Seamless CSDB Integration

- **Reduce authoring time by 5 minutes for every:**
  - Image insertion,
  - reference to a Data Module, and
  - reference to External Publications.
- **No jumping between multiple S1000D products** – Stay inside the R4i Writer XML authoring environment to "drag n drop", check-in, check-out and reset checked-out Data Modules in the R4i CSDB Common Source Database.
- **Side by side review** - Undock the DM window to allow side by side review, including ability to drag content from one DM to another.
- **Zero errors** – The auto-insertion of all the correct ICN, DMC and REFTP element and attribute information ensures authors do not create invalid references.
- **Prevent incorrect applicability filtering blocks being added** – Direct access to the R4i CSDB Server's Applicability Window, allows ACT Module content to be directly dropped into the Authoring Window, ensuring applicability mark-up is inserted correctly and easily.
- **Task Notification/User Folder** – Users can view the tasks that have been assigned to the user, including the files that are associated with the task. The user can see when the task needs to be completed and what state the task needs to be set when files are checked back into the Repository. The Tasks window also provides the user notifications of percentage of completion.

With direct access into the R4i CSDB Server, users can search, browse and preview images, data modules and external publication content, before fast insertion of the reference via the "drag n drop" interface.



Save Authoring time and deliver custom content

Authors won't have any problem preparing content specifically for each equipment make and model for end-customers, with assignment of ID's (applicRefid) to blocks of content made easy via simple attribute selection.

Dynamic update of common parts, spares, consumables and warnings/caution content

With direct access and insertion of content from CIR (Common Information Repository) / TIR (Technical Information Repository) modules, references are automatically monitored and the latest single source of content is automatically displayed to end-users of the content.

Reduce errors

With the document tree window displaying a document structure outline, guided editing via the tag insert catalog and smart insertion buttons for commonly inserted element structures, authors won't want to leave this interface!

Conform to Business Rules

With built in BREX Validation, included layered BREX support, authors can check they are writing to the project / contracted business requirements.

Save Development time

Has the ability to easily switch stylesheets while previewing the current document.

Document Compare

While authoring a document in R4i Writer, compare your in-work version to an older version in the CSDB.

Perfect Hotspots every time

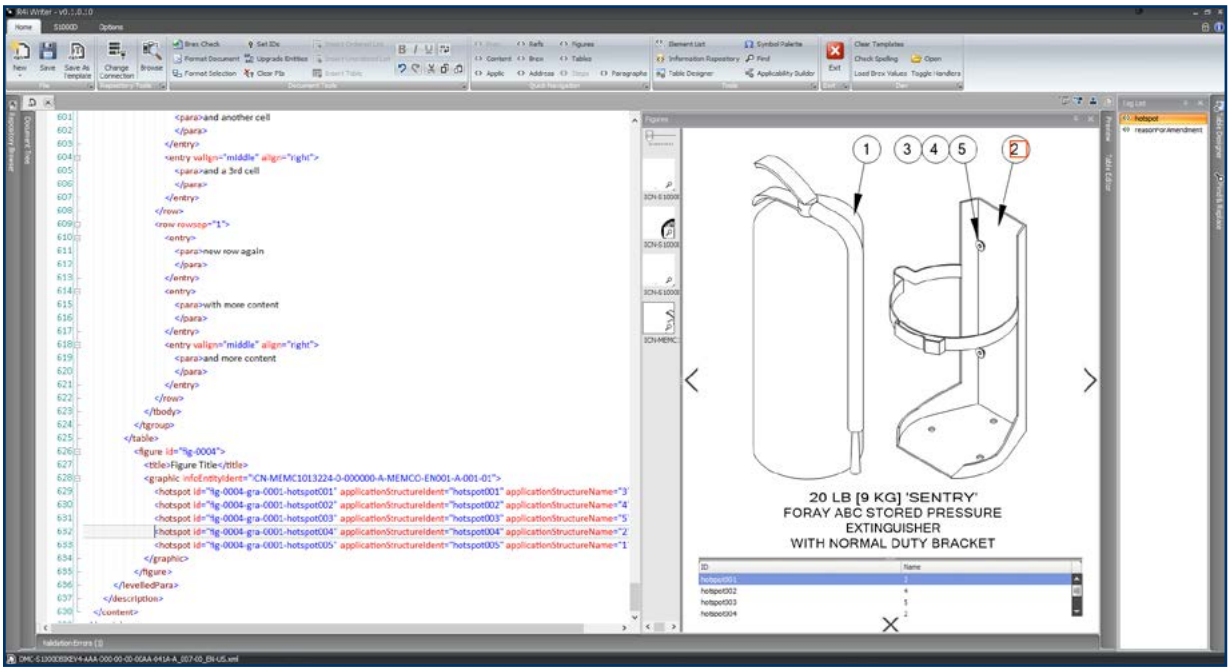
With the hotspot selection interface, images with hotspot details are displayed for easy selection and insertion in the authoring window, and saving hours of manually inserting references.

Save publishing time

The R4i Writer IETP Preview window allows the author to see how the Data Module will look when it is published to an Interactive Electronic Technical Publication (IETP).

System Requirements

- Windows 8/8.1, Windows 10*
- 16GB Ram
- .Net 4.7.2 and above
- Adobe Acrobat Reader for preview of generated PDF - Free Download



Writer PE

connect. create. validate.

R4i Writer Personal® (PE) is the most advanced XML Authoring Tool for Technical Writers required to create mission critical content. Write S1000D compliant data modules faster with drag & drop references, automatic hotspots and live document previews.

R4i Writer is optimized for the S1000D data formats and installs "Ready to Write" with schema's and stylesheets for S1000D versions 2.0 to latest XML included. With the DM Drive fully integrated within R4i Writer Personal, authors can now be creating high quality S1000D compliant operational and maintenance information within minutes.

The fastest and easiest way to create S1000D

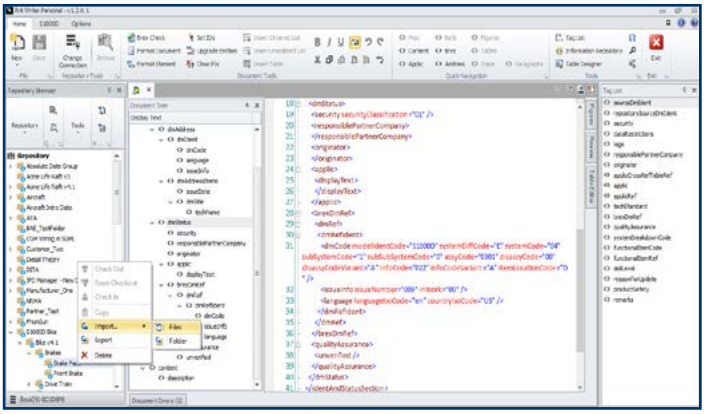
R4i Writer Personal® allows authors to work in a native XML authoring environment while controlling content and resources directly via the integrated DM Drive.

R4i Writer includes IETP preview and PDF publishing capabilities, eliminating the need for authors to use multiple S1000D tools or R4i products.

Seamless DM Drive Integration

- DM Drive is a secure data/content repository for XML data modules, illustrations and reference data. Stay inside the R4i Writer XML authoring environment and "drag and drop", check-in, check-out and reset checked-out Data Modules via "DM Drive".
- **Reduce authoring time by 5 minutes for every:**
  - Image insertion,
  - reference to a Data Module, and
  - reference to External Publications.

With DM Drive automatically installed, users can search, browse and preview images, data modules and external publication content, before fast insertion of the reference via the "drag and drop" interface.



- **Zero errors** – The auto-insertion of all the correct ICN, DMC and REFTP element and attribute information ensures authors do not create invalid references.
- **Prevent incorrect applicability filtering blocks being added** – Direct access to the R4i CSDB Server's Applicability Window, allows ACT Module content to be directly dropped into the Authoring Window, ensuring applicability mark-up is inserted correctly and easily.
- **Side by side review** - Undock the DM window to allow side by side review, including ability to drag content from one DM to another.

Save Authoring time and deliver custom content

Authors won't have any problem preparing content specifically for each equipment make and model for end-customers, with assignment of ID's (applicRefid) to blocks of content made easy via simple attribute selection.

Dynamic update of common parts, spares, consumables and warnings/caution content

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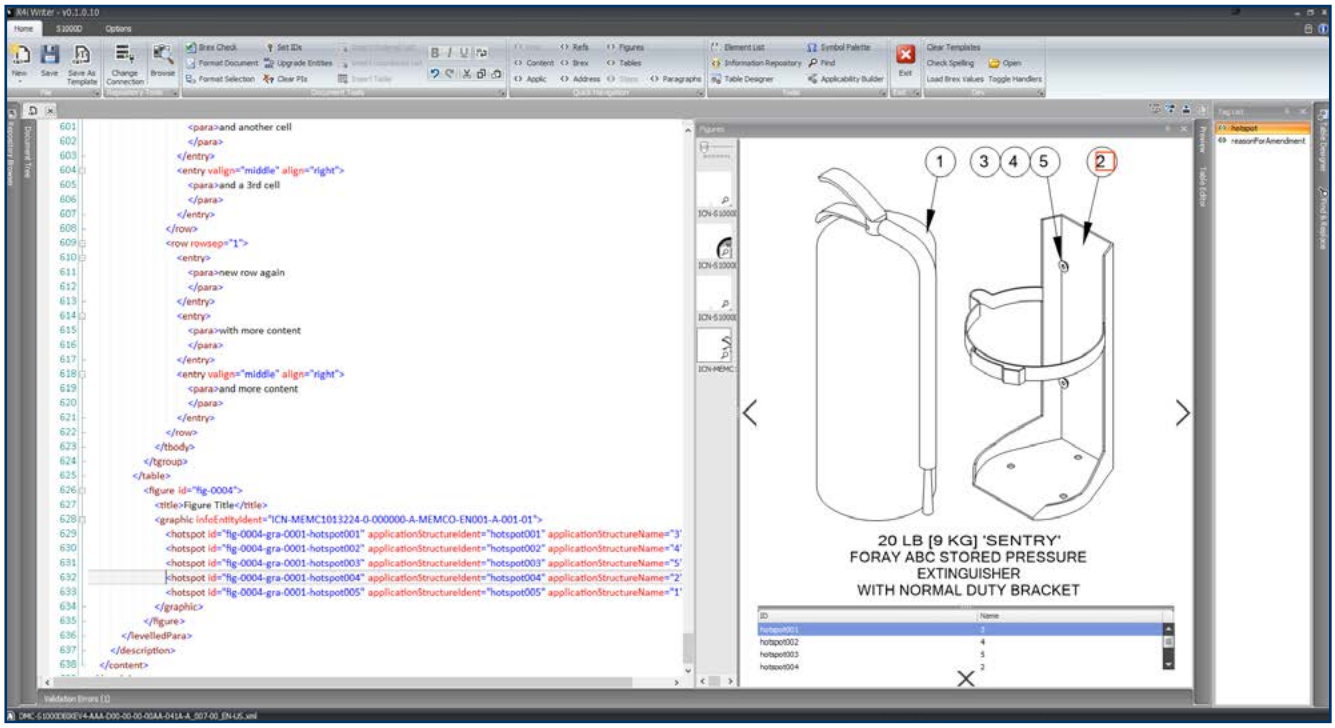
System Requirements

- Windows 8/8.1, Windows 10*
- 16GB Ram
- .Net 4.7.2 and above
- Adobe Acrobat Reader for preview of generated PDF – Free Download



STE with R4i Writer

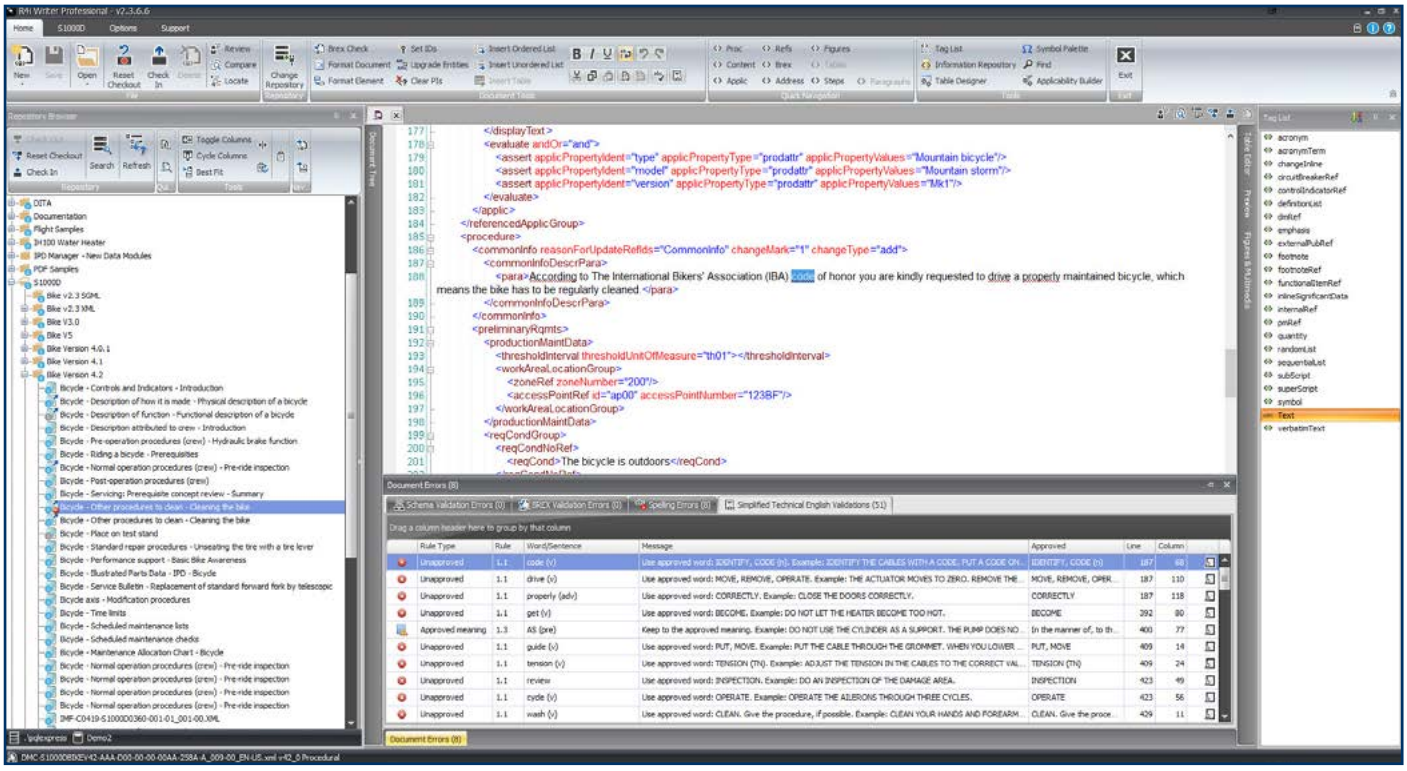
connect. create. validate.

R4i Writer is the most advanced XML Authoring Tool for Technical Writers required to create mission critical content. The optional Simplified Technical English (STE) Module enables authors to easily comply with the ASD-STE100 International Specification.

Validate S1000D data modules directly within R4i Writer accessing project specific and STE Dictionaries.

The Simplified Technical English (STE) Specification is implemented when technical content needs to be easily understood by readers. STE removes the ambiguity of written technical procedures and ensures consistency in writing style while reducing the cost of re-usability and translation which includes an information check for the "correct use of approved words".

- The built-in STE Assistant guides authors on the correct use of Technical English via an interactive view.
- Authors can check they are writing to the contracted project and STE requirements.
- An interactive view is provided for STE validation errors versus informational notifications, enabling authors to easily conform to STE Rules.
- Easily import project dictionaries from spreadsheets.
- Dictionary selection support allows users to validate to a specific project dictionary.



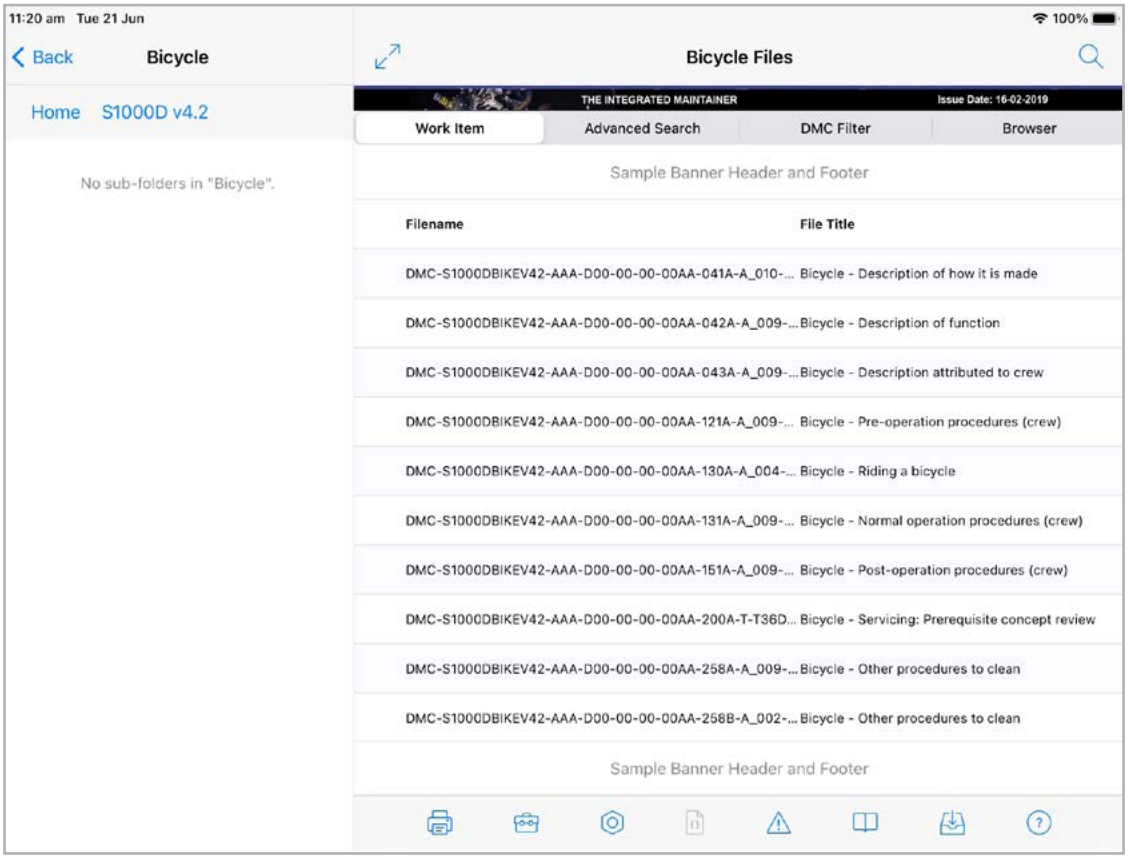
Full Content Control:

IETP's are published to R4i MobieTP PLUS via the R4i Content Distribution and Management Server (CDMS). Content is made available for download to R4i MobieTP PLUS apps from the R4i CDMS Library. Downloaded IETP's can be remote deleted from a iPad with R4i MobieTP PLUS installed and newer versions automatically made available for local download.

Important Information:

The R4i MobieTP PLUS application if FREE. There are no ads, in-app purchases or third party advertising.

R4i MobieTP PLUS requires the R4i Content Distribution and Management Server which is part of the R4i S1000D Publishing System.



System Requirements

R4i MobieTP PLUS

- Apple iOS 12.0 *
- PDF Reader for preview of PDF included in IETP
- Tablets require sufficient internal storage to store IETP's in offline mode, if required *

R4i CDMS Node

- Windows 2012, 2012 R2, 2014, 2016 or 2019 Server *
- 16GB recommended
- ASP and ASP.NET IIS 8.0/8.5/10
- .Net 4.7.2 and above

IPD Manager

import. create. deliver.

Easily create high quality parts catalogs with hotspot and warehouse data link support.

The **design and production** of an asset starts with engineering information in the form of drawings, Bill of Materials (BoM) and supporting technical information. As soon as the design is approved, technical writers, illustrators and engineers need to collaborate to produce intelligent parts information that is supported by in depth operating and servicing information.

Traditionally, spread sheets hold parts information while illustrations are stored in repositories or on network drives. The collation, editing and publishing of the required data can be complex and time consuming.

R4i Illustrated Parts Data Manager automates the process of parts data creation, speeding time to market and eliminating human error from the parts data production cycle. Designed to connect to disparate information systems, Microsoft Excel spread sheets and SQL Databases, the R4i IPD Manager allows authors to simply map the data fields to their required export data sets.

Non-proprietary XSL stylesheets then generate IPD manuals or S1000D Data Modules with linked illustrations. This interactive content can then be produced as PDF, HTML or checked into the R4i CSDB Server® for inclusion in the R4i Viewer® package.

Powerful Features

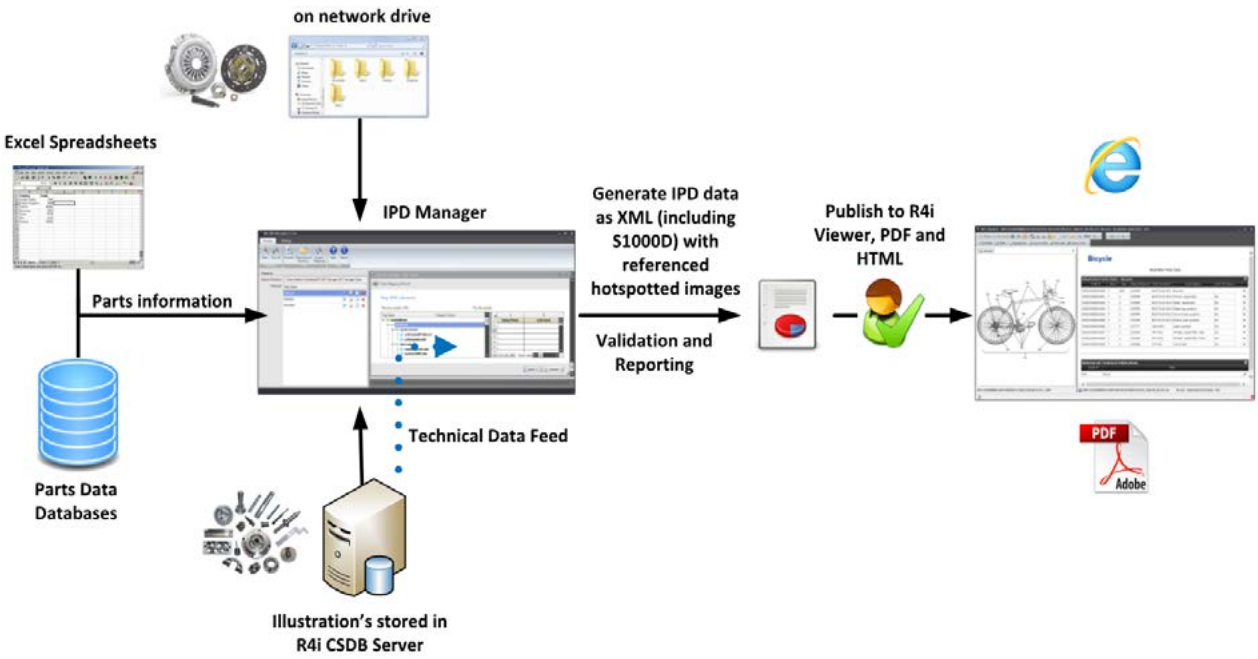
Designed for Microsoft Windows operating systems, R4i IPD Manager can be used as a stand-alone tool or linked to the R4i CSDB Server® to access illustrations and content.

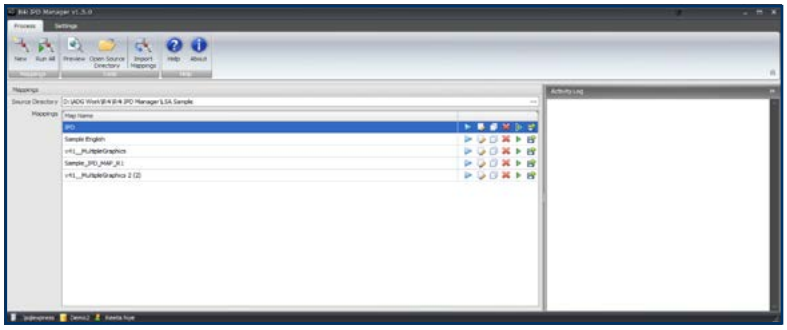
Easy to use R4i IPD Manager powerful features include:

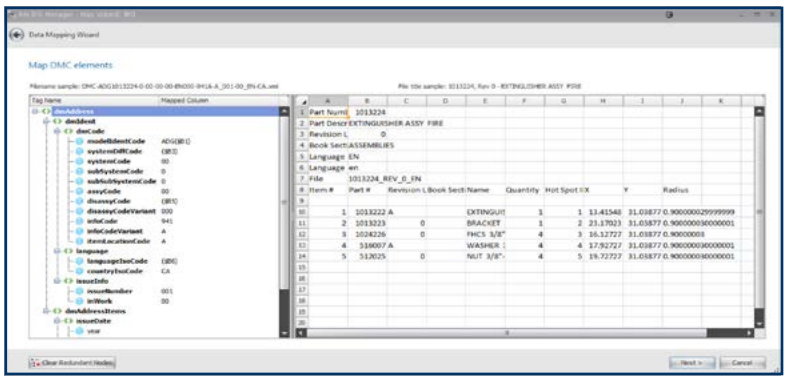
- Supports importing of SQL database and Excel spread sheet content.
- Fast creation of S1000D Data Modules version 2.0 onwards.
- Automatic generation of hotspot hyperlinks.
- Easy generation of the Identification and Status block.
- Automatic Cross References.
- Automatic linking of illustrations.
- Built in Data Mapping wizard.
- Support for automatic completion of data fields.

One time setup

1. Select the version of S1000D.
2. Select the Excel spread sheet or SQL data source.
3. Select the designed data range.
4. Map columns, elements and attributes.
5. Save the configuration.
6. Generate the Illustrated Parts Data XML files.
7. Preview with R4i Viewer Preview.


on network drive
Excel Spreadsheets
IPD Manager
Generate IPD data as XML (including S1000D) with referenced hotspotted images
Publish to R4i Viewer, PDF and HTML
Parts information
Validation and Reporting
Technical Data Feed
Parts Data Databases
Illustration's stored in R4i CSDB Server
PDF
Adobe




Map DMC elements

LTS (LSA to S1000D)

engage. collaborate. enable.

R4i LTS (LSA TO S1000D) supports operation and maintenance of complex assets by extending logistics product data into dynamic S1000D electronic publications.

R4i LTS is a powerful productivity tool that takes engineering content contained within a Logistics Support Analysis (LSA) database and re-use it to dynamically generate compliant technical data to the ASD S1000D specification.

R4i LTS brings flexibility and simplicity to the production and maintenance of S1000D technical publication content, enabling technical authors to dynamically build and update S1000D data from an OmegaPS logistics product database.

R4i LTS is an optional licensed module that integrates with the R4i Common Source Database (CSDB) Server (see separate brochure).

How it works

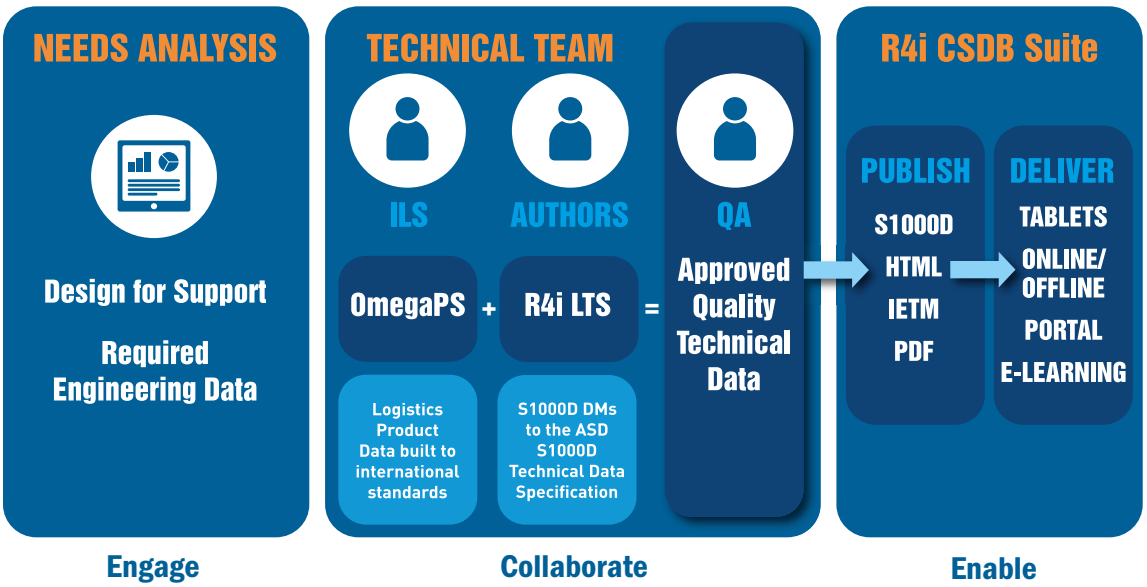
R4i LTS accesses LSA Databases or reads XML data exchange files that have been built to compliant product support data structures such as SAE GEIA-0007, MIL-STD-1388-2B, DEF STAN 00-60 DEF AUST 5692, and ASD S3000L.

The content generated from the LSAR via R4i LTS can then be published and delivered as ASD S1000D compliant content. Utilizing R4i Binder from the S1000D R4i Publishing Suite, the S1000D data can be delivered as CAWG CMP, DEF AUST 5629, MIL-STD-3031 and DND CFTO PDF's.

Publish IETM/IETP content to mobile devices with R4i MobieTP and R4i Viewer via the R4i Content Distribution Management Server (CDMS).

Benefits of R4i LTS

- **Agile Pubs** – Agile technical publications created at the speed of change from your product support data, reduces the build cycle and improves quality to meet your customers' requirements.
- **Speed** – Generate technical documentation earlier in design and development, and reduce your revision cycles.
- **Save Time** – Reduce project start-up time by automatically generating 30% of your base technical documentation, directly from OmegaPS or GEIASTD 007 Data Exchange Files.



- **Quality** – By producing technical content from from OmegaPS or GEIASTD 007 Data Exchange Files, the LSAR content becomes the single point of truth.
- **Deliver** – The R4i S1000D Suite provides all stakeholders with access to authorized content via mobile devices, online, offline and from a distribution portal.

S1000D Support

R4i LTS allows connection to the LSAR project data and data exchange files in your OmegaPS database to generate compliant S1000D data modules with just one click. R4i LTS supports the automatic generation of S1000D content to Issue 4.0 and above (including patch versions).

The following content is created:

- Data Module Coding (DMC's)
- Common Information Repository (CIR) modules for Consumables, Spares, Tools and Warnings and Cautions
- Procedural Data Modules
- Illustrated Parts Data Modules
- Images with their assigned Illustrated Control Numbers (ICN)
- Automatic linking from Procedural Content steps to internally referenced Tools List

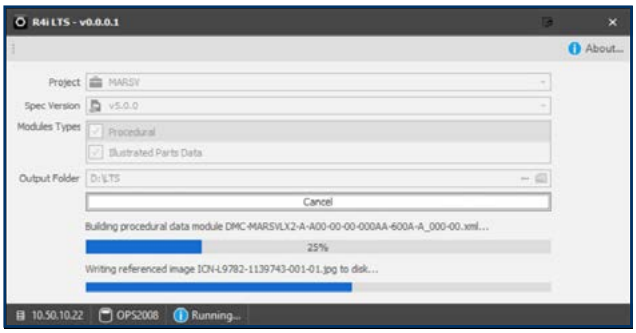
Engage and Collaborate

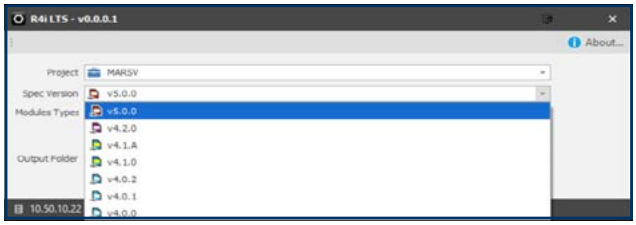
By deploying R4i LTS your data will be aligned with authorized engineering content, improving the quality whilst reducing data revision and providing long term cost savings during a project's life-cycle.

Enable

Re-using approved data enables responsive publishing to HTML, IETM and PDF with a dynamic delivery system to tablets with online/offline, portal and e-learning platforms.

When R4i LTS is deployed with the commercial off-the-shelf R4i Product Suite, technical content can be maintained (R4i Writer), managed (R4i CSDB), published to PDF (R4i Binder) and free IETM viewers (R4i Viewer), with controlled distribution (R4i CDMS) to mobile devices (R4i MobieTP).





WorkSpace Arbortext®

secure. manage. deliver.

Author S1000D Data Modules in Arbortext Editor v5.4, 6 and 7 and browse directly into the R4i CSDB to easily insert references to Data Modules, External Technical Publications, Images and Applicability element blocks.

Faster, Easier S1000D Content Creation

R4i WorkSpace® is a powerful plug-in for Arbortext Editor v5.4, 6 and 7. R4i WorkSpace installs with schema's and stylesheets for S1000D versions 2.2 XML through to 5.0 of the ASD S1000D Specification. Technical Authors can work in their native Arbortext Editor environment whilst accessing Data Modules, images and other resources directly from the R4i CSDB Server.

The tool eliminates the need for authors to use multiple tools, providing direct access into the hosted or locally installed R4i S1000D Common Source DataBase.

Templates driven by selected Schema and BREX

When a new DM is started, the Schema selected will be read and will load up a document with all mandatory elements and attributes that is based on schema definition combined with rules set by the BREX. The pre-configured DMC structure along with the default text values, will be assigned to all the mandatory elements and attributes.

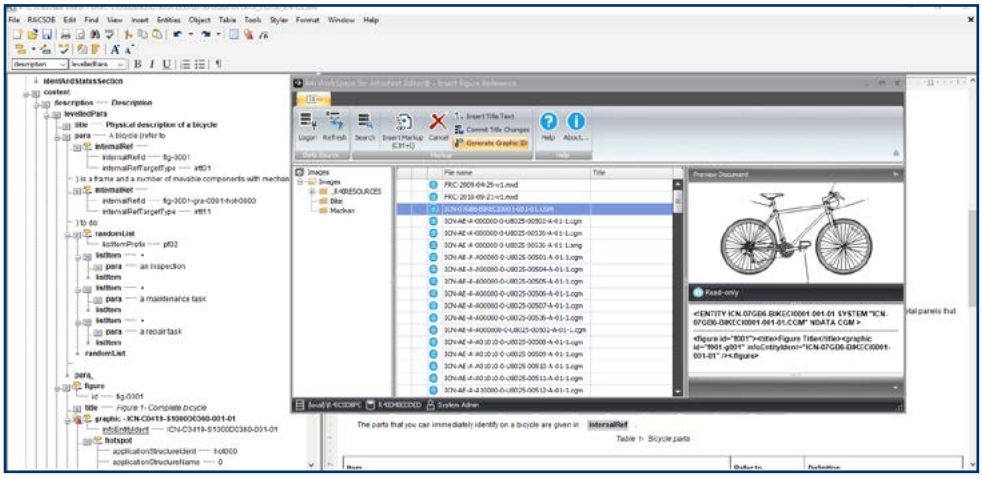
SmartSave

Save the document with any name. When the DM is checked into the R4i CSDB, R4i WorkSpace will scan the file to find the DMC value assigned and will correctly name the DM according to the S1000D specification.

Seamless Integration into R4i CSDB

- **No jumping between multiple S1000D products** – Stay inside the Arbortext authoring environment to check- in, checkout and reset checked-out Data Modules in the Common Source Database.
- **Save publishing time** – The R4i WorkSpace Preview window allows the author to see how the Data Module will look when it is published to an Interactive Electronic Technical Manual (IETM).
- **Reduce authoring time by 5 minutes for every:**
  - Image insertion,
  - Reference to a Data Module, and
  - Reference to External Publications.

With direct access into the R4i CSDB Server, users can search, browse and preview images, data modules and external publication content, before inserting a required reference.



Seamless Integration into R4i CSDB

Zero errors

The auto-insertion of all the correct ICN, DMC and REFTP elements and attribute information ensures authors don't get the reference wrong.

Prevent incorrect applicability filtering blocks being added

Direct access to the R4i CSDB Server® with an easy drag and drop interface for adding ACT module content, making sure that applicability mark-up is inserted correctly and easily.

Save Authoring time and deliver custom content

With only one mouse click required to assign applicability IDs (applicRefId) to blocks of content, authors won't have any problem preparing content specific for each equipment make and model for end-customers.

Dynamic update of common parts, spares, consumables and warnings/caution content

With direct access and insertion of content from the CIR/TIR (Common Information Repository/Technical Information Repository) modules, references are automatically monitored and the latest single source of content is automatically displayed to end-users.

Consistent Database Driven Content

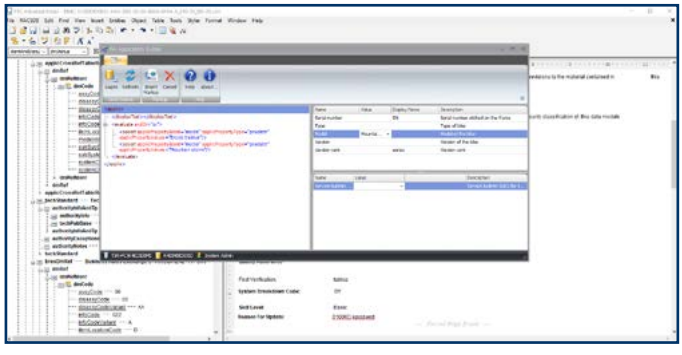
Leverage the power of Arbortext Editors authoring interface with the power of an S1000D CSDB. R4i WorkSpace enhances the support of S1000D XML version 2.2 XML to version 4.2 by combining the ability to "look and link" Arbortext Editor directly into the local or hosted R4i CSDB Server®.

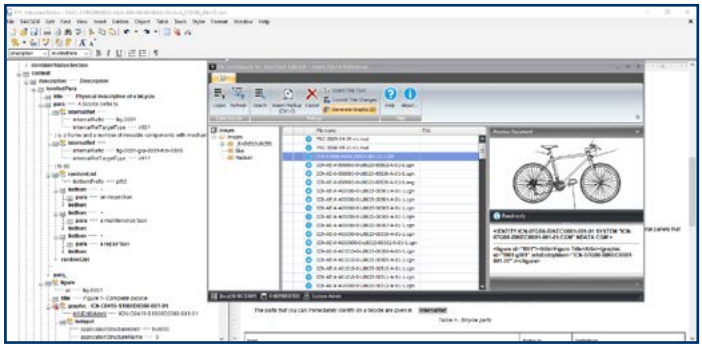
S1000D Elements and Attributes that have been mapped to advanced functionality and integration via the R4i WorkSpace interface includes:

- dmRef
- figure
- externalPubRef
- applic
- referencedApplicGroup
- accessPointRef
- circuitBreakerRef
- controlIndicatorRef
- functionalItemRef
- supplyRqmtRef (Procedural)
- toolref (Procedural)
- zoneRef (Descriptive)
- applicRefId (Attribute)

System Requirements:

- Windows 8/8.1, Windows 10*
- 4GB Ram (8GB recommended)
- Internet Explorer 11 or higher (Edge is not supported)
- .Net 4.5.2 and above
- Arbortext Editor v5.4, 6 or 7
- R4i CSDB Server (local or hosted on R4i AIR)





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