SkyWriter Features

at SOCAL

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https://skywriter.prototypeindustries.com/dist/skywriter.html

Contents

SkyWriter® Feature List

General Authoring/Editing

Automatic XML tag generation (greatly reducing the need for standards expertise/structured authoring knowledge)

- Internal content structure modeled, after but not limited to, industry specifications or restrictions
- Internal content can be customized, published, filtered and transformed to any desired output or specification: S1000D XML, HTML, SGML, PDF, MS Word/Excel, or mobile application
- Real-time content commit and publish upon edit with ability to restore from the changes in the past
- WYSIWYG Preview/Editor
- Guided context menus maintain structural integrity and simplify industry schemas and DTDs
- Real-time revision manager generates automatic revision markup on live interactive preview
- Auto sequence number tracker for tables, figures, task, subtask, page block, etc.
- Ability to create multiple items at different indent levels via paragraph editor
- Multiple content views and editing options
- Automatic line-breaks detection with options to create multiple items, multiple paragraphs, or convert line breaks into spaces
- Use of content field variables to allow users to change multiple instances of a variables throughout an entire document
- Intuitive smart search and replace features
- Ability to copy/paste elements with structure including drag and drop
- Ability to undo-redo actions
- Automatic detection and clean-up of extra white spaces in paragraphs
- Rollback content modularly to previous revision (future function)
- Ability to back up any document to any time coordinate using flashback restore
- Multi-level user locking feature to prevent multiple users from editing the same content.
- Customizable section editors: edit an entire manual from one root tree view or break it up logically into multiple smaller sub-section editors (e.g. Task Editor or DPL Figure Editor)
- Sorted and grouped task-oriented tabs for fluent navigation
- Extensive hyperlinking: With every feature, module, and page under one umbrella, hyperlinking everywhere is very useful and great time saver. All links can be opened in a new window so your current place is not lost. A few examples:
  - Parts List to Master Part Record
  - Parts List to Vendor code data
  - Job data to corresponding source data
  - Program to all associated Jobs
  - Tracker Reports to Jobs/Programs/DRs/Parts/etc.
  - Source Data summary to source data files
  - Graphic summary to any graphic or graphic sheet in the book
  - Book graphic to any source library file

Automated Content Generation

Common

- Create custom manuals from templates with standard structure/procedures with job specific metadata automatically placed in. Various editor tools use preset product applicability associations to filter out non-applicable data
- Automatic generation of task-level Job Set-up Info tables
  - References
  - Tools
  - Consumables
- Service Bulletin tracking and integration (automatically finds applicable SBs)
- Automatic generation of revision attributes for PL items, attaching parts identifiers, and enforcement of ATA PN rules
- Automatic glossary generation using custom and common dictionaries
- Automatic cross-referencing within DPL figures

System

- Module based authoring
  - Live preview of document structure
  - Automatic placement of modular data into predefined document structure
  - Job metadata is automatically applied for data module filtering
  - Automatic pre-build validation for references, missing content, logic parameters, etc.
  - Live preview of custom data module content
  - Previews of all job metadata: Equipment list parts, graphics, SNS, Systems/sub-systems, A/C Type, Software
  - Auto-population of circuit breaker tables within procedures
  - Automatic generation of effectivity splits per EL differences
- Compare and auto-merge of Data Module content into manuals
  - Internal XML content feature stores which Data Module revision is the source of the task's content in the book. A report shows which tasks needs to be remerged if later DM revision exists. A simple visual compare and one click merge feature updates the content within the book, then the revision manager automatically places revision markings per specification.
  - Automatic embodiment of conditional SB applicability upon DM content merge
  - Batch DM merging for FIMs/TSMs
- Automatic generation of WDM Lists (Wire List, Equipment List, Hookup List, Ground List, Splice List, Terminal List, and Circuit Breaker List) from a single source spreadsheet
- Automatic generation of tedious "Aircraft Cable Routing" procedures from global part/BOM data
- Automatic task card generation (per specific task card template)
  - on import of OEM SB in SGML/XML
  - for AMM Tasks (including referenced tasks option)

- Automatic Master fault/BITE list import feature for FIM/TSMs
  - Analyzes massive customer fault list and produces summary of changes required
  - Auto generates necessary data modules using sophisticated logic
- Automatic generation of Description and Operation component location and master CB tables
- MPD: dynamic insertion of latest released AMM references
- MPD: automated Service Bulletin Mod Dots matrix generation (Part 2 Schedule)

Component

- Comprehensive figure building via Figure Manager tool
  - Figure breakdown from Job Part BOMs
  - Re-use content from existing data pool figures
- Automatic generation of editable assembly and disassembly procedures (based on DPL breakdown), automated corresponding figure and item references within
- Build new DPL figures in intuitive BOM-based Part List editor
  - Drag and drop multiple BOM items into Part List
  - Automated item applicability calculation
  - Automatic source BOM/Rev. tracking per item
  - Load/Save Figure from/to data pool
  - Change item increment value
  - Move items up/down, increase/decrease indent
  - Insert SB applicability
  - Illustrated vs. non, attaching part tracking and handling
  - Insert Torque values
  - Automatic variant creation
  - Built In validation PL error checks
  - Validation of items and quantity from BOM that are added to the DPL
- Automatic generation of torque tables, vendor lists
- Automatic geo locator calculation upon X-Y coordinate import

Automated PDF Generation

Common

- Automatic generation of Bookmarks and customer PDF settings
- Automatic generation of Highlights page (or Letter of Transmittal)
- Automatic generation of Title page
- Automatic generation of Review and Master release stamps
- Automatic generation of List of Effective Pages/Data Modules
- Automatic generation of Record of Revisions and Temporary Revisions pages
- Automatic generation of Table of Contents pages
- Automatic generation of formatted headers and footers
- Automatic generation of styles and formatting
- Automatic generation of industry required pagination and intentionally left blank pages
- Automatic revision bars, footer rev dates, LEP rev dates
- Automatic conversion of industry formatted graphic refs to sequential Figure Nos.
- Automatic hyperlinks in TOC, LEP, Figure/table references, internal references including PL items, illustration callouts in PLs, and DM tool/consumables to/from tables
- Supports searchable embedded SVG graphics, great for wiring diagrams and schematics
- Numerous PDF options that exploit the use of internal content attributes such as Highlighting, Writer's Comments, field variables, and numerous data associations
- Numerous one-click PDF options outside of book content: SDLs, graphic previews, DRs, DMs, Quote Letters, QA checklists, etc., etc.

System

- Automatic footer effectivity/applicability
- Supports both open and closed effectivity ranges
- Supports multiple effectivity types for display (CEC, MSN, VENBR, Reg. No.)
- Supports 2 to 6 character effectivity lengths
- Supports alpha character effectivity text

Component

- Automatic generation equipment designator index and numeric index
- Option for specific IPL figure equipment designator list
- Supports Part-specific effectivity/applicability

Equipment List (EL)/Standard Numbering System (SNS)

*The Equipment List and SNS modules are the central entry point for the data structures and logic required to produce a system suite of manuals. The EL data facilitates various reports that detail the required descriptive, procedural, and graphics components needed for the entire custom Program. Once the required data modules and library graphics are completed, when combined with job-specific metadata, list of parts, and SNS structure, it enables full automation of the manual content assembly through the AMM document builder, AIPC figure generator, and graphic file generation. It ultimately facilitates the QA of the suite of manuals as a whole.

- Manages Standard Numbering Systems and allow associations to LRU parts or any maintainable end items
- Content captured for every End Item: Part No., SNS, Install Drawing No., Quantity, Equip. No., Zone/Location/seat class, Modifier, Station/Frame, Deck (each attribute has its own set of lower attributes for example Part has BOM, nomenclature, etc.)
- Every EL field captured facilities automation and transversal likeness between a set of manuals:
    - Ex 1: All AIPC/IPD installation figures can be generated from grouping equipment list rows by SNS, Part, and Zone (figure titles automated by Part nomenclature, NHA is top assy item, main part is first item), graphic elements and files are all auto-generated in turn.
    - Ex 2: Graphics can be generated for an entire book, with corresponding zone and component library files placed in along with Equip. No. and Station/Frame et. as ready to go graphic objects
    - Ex 3: Using the smart build feature, an entire AMM can be constructed with the various content parts and content structure
    *All of the automation and logic above derived from the single source EL preventing erroneous re-entry across the manual set
- Built-in EL editor Quality Assurance features:
    - Part ancestor with NHA
    - Regular expression checks for Equip. No.
    - Quantity
    - Missing SNS association
    - Station/Frame within zone
    - Zone within deck
- Automatic EL initiation via BOM import and SNS associations
- Ability to view and make edits to multiple ELs or CBLs simultaneously using the EL/CBL Summary tool
- Effectivity filtering to see EL/CB summary across a specific subset of A/C
- Associations between EL items and CBs facilitates further automation of CB list generation within various procedures/descriptions and WDM lists
- Multi-fill function allows data to be entered into more than one cell or utilize Excel to edit and import with validation

- View Build Effectivity Matrix gives ability to quickly scan for inconsistencies in system, sub-system, and software versions across all A/C effectivities
- Intuitive manager for ATA maintenance function codes and S1000D information codes

Parts

- Global part database, attributes, and associations facilitate numerous automations
  - BOMs
  - CMM Refs.
  - Mfr Part Info
  - Related Part relations
  - Leading Particulars
  - Equipment Designators and Geo Locators
  - Assembly Install Details
  - CIR Part Data
  - NHAs
  - Used on Programs/Jobs/ELs
  - Mod Dots
- Batch find and replace for global part attributes
- Validation of Imported part data before commit
- Part series and attributes association facilitate automatic content filtering from templates or master data modules during smart builds

Product Systems/Subsystems/Software

- Comprehensive customer Program module: captures customer orders, associated jobs, program managers, software, systems, and associated aircraft
- IFE Systems/GCS/In-seat Power Supply/Software versions definitions allow product name consistency
- Product groupings and attributes association facilitate automatic content filtering from templates or master data modules during smart builds

Aircraft Types/Tails

- Storage and automatic import of specific tail and airframe effectivity data
- Effectivity associations remove entry duplication across multiple manuals
- Storage of commercial aircraft type data in relational hierarchy
  - Airframe Mfr
  - Aircraft Type
  - Aircraft Series
  - Aircraft Model
- Aircraft hierarchy and associations facilitate automatic content filtering from templates or master data modules during smart builds
- Searchable aircraft effectivities and ability to see which jobs and programs they have been used on

- Aircraft zone definition and graphic zone locator and sub-locator library facilitate automation and consistency in many areas

Source Data

- Comprehensive source data management and configuration management module
- Source data types defined and mapped to document types facilitates automated outlines of source data required for a suite or specific set of manuals
- Job source data requirements integrated into product workflow lifecycle
- Integration with customer source data repository API (Oracle Agile) to automatically retrieve, store, and log new source data (Web Services REST API available to integrate with other systems for Job/DR status reporting as well)
- Ability to directly access, and click through engineering source drawings/material, making them available within seconds to view
- Trend towards source data XML to more easily directly transform source content to technical publication content

Illustration

- Integration with Corel Designer including SkyWriter-specific customizations, as follows:
  o Graphic Object Manager
  o Insert Detail Locator/Identifier
  o Insert Section Locator/Identifier
  o Insert Item Callout
  o Insert Zone Callout
  o Insert Equip. No. callout
  o Insert Stringer/Rib/Frame/Station Callout
  o Custom SVG save
  o Auto detection for newer macro versions
  o Various other automation features and shortcuts
  o Built-in illustration specification validation
- Support for multiple graphic extensions which include, CGMv4, SVG, CDR, JPEG, DWG
- Approved graphics library utilizing SVG (XML) format
  o All advantages of XML publishing apply to SVG format graphics (E.g. generate an entire set of illustrations using only XSL or update content for an entire set of graphics using XSL or SQL), which are not possible with DG, CGM, JPEG, etc.
- Embedded Graphic previews in Editor
- Check in/check out of reusable library graphics
- Roll back library graphic changes to previous revision
- Ability to review graphics before release
- Auto-generated graphic numbers
- Intuitive Graphics search with preview
- Industry standard Graphic size options for consistency
- Option for foldout page size for large graphics (WDs/schematics/Large PCBs)
- Searchable and batch updatable Illustration Metadata
- Repository for all proprietary controlled automation code used with graphic software to reduce task cost and improve standardization
- Graphic generation within HTML preview, double click to launch Corel and edit away, save using custom-built macro features
- Feature to add screen captured JPEGs for quick paste from clipboard into manual
- Illustration revision tracking so latest drawing is always used

Quality Assurance

- Automatic Digital Delivery Quality Check (DTD validation ATA 2200, S1000D XSD and multi-tier BREX validation)
- Integrated spell checker with customer specific dictionaries
- Simplified Technical English Dictionary Validator (future function)
- Automatic cross-referencing checks between links, faults, parts, illustrations, tasks, modules, and more
- Final document approval process before Master Release
- Other built-in Automatic Final Validation Checks:
  - Graphic and internal reference validation
  - Graphic file naming automation and validation
  - Service Bulletin and Temporary Revision incorporation validation
  - Change request incorporation validation
  - Various internal business rules validation
  - Validation of illustrated items to DPL
  - Vendor address and CAGE code validation
  - Configurable text displacement validation
  - 3-step quality assurance process , Writer, Reviewer, Master QA
  - SB Applicability validation
  - Parent/Child Effectivity/Applicability validation
  - Several checks to make sure illustration content
  - Source Library files for delivered graphics using latest version
- More QA checks can be dreamt up and easily implemented

- Job request and demand placement management system with rule-based data entry to prevent incorrect job entry
- End-to-end document change request management system with auto-notification emails and reports
    - Ability to create a single request and associating it to a suite of manuals
    - Automated notifications delivered at each workflow milestone
- Smart forms lead the submitter to include all pertinent information, customized by document type
- Rich Assignment/job Queue function whereby all users can view and act upon all tasks queued up for their attention all in one place with various priority sorting options, as their home screen
- Ability to create custom scheduled email notifications to go to any user or group of users in the system (Automatic messages sent to customer during review cycle, changes and releasing a Book)
- Automatically updated date indicators showing if and when given data set has been "Last Checked"
- Automatic packaging of related files and source data when sending over job for initial review (automatically prepares a fully compliant final "package" of deliverable electronic files including graphics)
- Revision checking live source data with one button on Master SDL
- Production and Forecast Reports to pull and monitor status of missing items (source data) needed to start process of writing the Book (Source data tracking between manual revisions, ease of seeing what's rolled)
- Automatic data integrity quality checks, reports problems, and identifies fault-remedy solutions
- Module-based Training Content Module, employee trainee tracker, and Publishing
- Easy access to archived master released documents for reference or reuse
- Service Bulletin entry to auto-generate document change requests for affected manuals
- Database of common data such as customer part information, standard text (CAUT/WARN), vendors, ATA maintenance codes, with custom interfaces
- Data "pools" of pre-defined information to manage writing and data capture tasks
- Recovery option for deleted jobs
- Error detection with detailed messages for a faster resolve
- Helpful prompts to expedite production
- Real-time updates can be integrated through SkyWriter during concurrent publication processes
- Integrated system for receiving/processing/tracking customer review comments (Correspondence and job notes tracking history of changes to Job records)
- End-to end job status tracking from quoting to master release

Data Trackers

- Data entity trackers include
    - Job/Program (2-in-1)
    - Part
    - Document Requests
    - Data Modules
    - Graphics
    - Training
- Extensive and robust search and reporting capability for all aspect of system activities including scheduling, quoting, billing, and document deliverables, providing real-time status and KPIs
- Option to fully customize search result fields
    - Column order
    - Column width
    - Sort
    - Grouping
    - Hide mismatched sub-rows on one to many results
- Save and share search results with other users, or for later use via clipboard hyperlink
- Reporting access rights options
    - Role-based
    - Customer-based
    - Airline-based
    - User-based
    - User Group-based
- Ability to view search criteria query descriptions
- Customizable iWiN Reports summary page
    - View Filters
    - Categories
    - Titles/Descriptions
    - Display result counts without running full search
    - Associated custom notifications with recipients list
- Save/export reports as an MS Excel file with the option to contain the Search conditions used
- Ability to create on-the-fly customizable reports
- Ability for external clients to create reports
- Ability to create a custom report and convert it to a REST API call
- Integrated Report Notifications Scheduling via email, with customizable email address options
    - Standard attributes: Name, Type, Status, Create date, Last sent date, Repeat pattern, recipient list
    - Enhanced features:
        - Single Notification can yield different results for each recipient based on their specific permissions

- Single Notification can piggy back one user and provide same results for all recipients
  - Options to attach Excel export of reports
  - Option to insert tabular report content into body of email
  - Option to insert hyperlink to the real-time report into body of email
  - Option to not send as scheduled if associated reports have no results (useful in maintaining data integrity)
- Integrated change history tracking of majority of data, activities and records in the system
- data module management reports
- parts management reports
- Various automated reports to monitor job status/stage (Change Request Reports page allows users to manage the overall process using canned or customized reports)

Admin

- User Activity Report
- User Process Log
- User Editor Lock Summary
- User Login History
- Change history logs for numerous data entities
- Various user stats auto-logged
  - Number of logins
  - Account create date
  - Last Login
  - Failed login count
- Extensive HR/Personnel features
  - 100+ attributes for each employee stored
  - Automated HR forms, insurance forms, etc.
  - Automated Employee Benefits Summary

Editor/Production

- Highlights Report summarizes all changes within a manual
- Data Module Report indicates which source modules are out of date, missing, or no longer applicable (connected to QA)
- Spelling Error Report (connected to QA)
- Parts Report indicates which content is needed/missing from a manual (connected to QA)
- Circuit Breaker Report summarizes all circuit breaker lists within a manual and allows auto-generation of lists based on CB summary data.
- Content Association Report summarizes all data associations throughout the manual (part, product, A/C Type, Logic parameters, etc.)
- Library File Report indicates which illustration library files are needed for a particular manual (connected to QA).
- Graphic Summary Report summarizes all graphics, all sheets within each graphic, and all library file associations for each sheet (connected to QA).

Collaborative Review Management

- A central place to track the review cycle of the manuals
- Internal users and customers share the same interface
- simple review cycle process with one customer coordinator
- complex review cycle process with multiple customer reviewers from different departments
- activity time stamps for traceability
- Real-time email notifications inform all parties when actions are required
- Customers can submit reasons for rejections, allowing for KPI information to be collected

Financial Management

- Full function, integrated and automated employee time tracking and timesheet generation functionality
  - Employee project time tracking which enforces daily accurate time account of the users
  - available, time spent, time remaining
  - Enforces compliance with lunch periods and break time rules, which is good for audits
  - Employee time stats to quick-view all time off taken
  - Real-time summary of vacation, time off taken, time off available, and time off remaining
  - Employee time summary for managers
  - Employee time off real-time reports for managers
  - One-click time sheet PDF generation for pay periods
- Automated profit/loss calculation
- Simple quoting system that sends out automated emails to the customers (quote letter creation and association)

Standards Compliance and Supported Standard Document Types

- Compliant to ATA iSpec 2200 SGML requirements
  - AMM, AIPC, CMM, TSM, WDM, MPD, SB, IPC, ACMM
- Compliant to S1000D XML requirements
  - MP, IPD, CMP, SB
- Compliant to Spec 104 Ground Equipment requirements
  - OMM, GEIM
- Automatic transformation of internal XML data modules from single source into compliant ATA SGML or S1000D XML
- Automatic transformation of ATA 2200 SGML compliant CMM to S1000D XML compliant CMP
- Standard Practices
- Engineering ATP, ASC
- Training Module
- Task Cards, EOs

Security

- SSL secure
- Secure login and account restore ability
- User account sign up must be validated by customer email
- Restrict job assignment types per user
- Restrict customer access per user
- Restrict role per user
- Restrict doc type access for Reporting/Job entry/Editing separately per user
- Restrict doc type access per customer
- Restrict job time tracking per user and assignment type
- Automatic account deactivation after XX days
- Automatic account deactivation after X failed logins