

Rayterton Product Lifecycle Management (PLM)

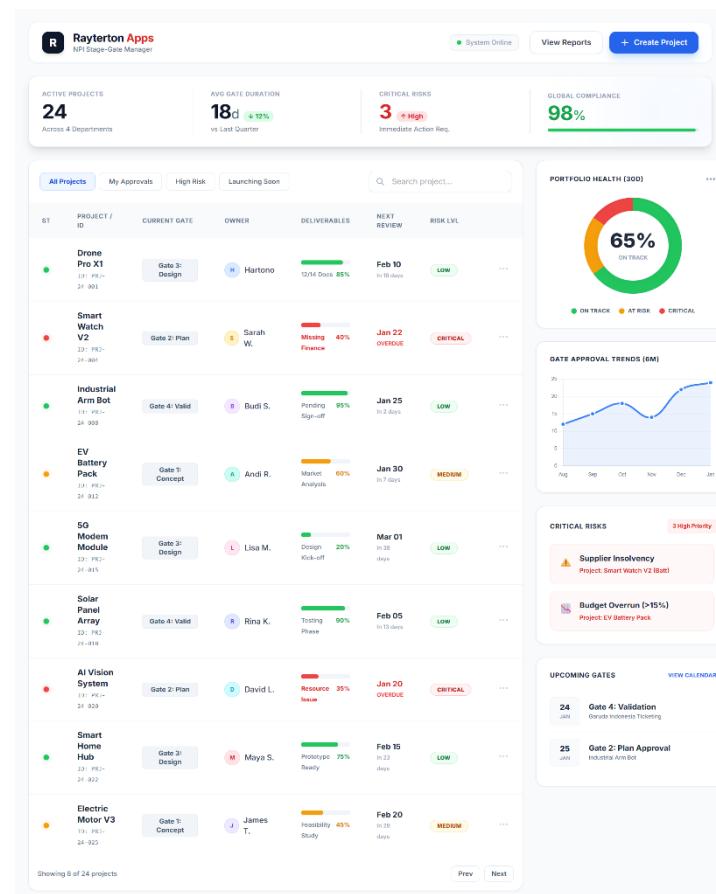
Orchestrate Your Entire Product Business: From Concept Definition to Manufacturing & Service. Empower your leadership with a real-time Executive Product Portfolio Dashboard. Manage your entire product lifecycle from NPI Stage-Gate and engineering data management to supplier collaboration and quality assurance on one platform.

Transform Your Product Operations at the Enterprise Level

Rayterton Product Lifecycle Management System is an all-in-one platform designed for **modern manufacturers** to **configure complex multi-level BOMs**, **synchronize engineering and supply chain data**, and **protect product margins** with **automated costing and compliance guardrails**. We combine **innovation and experience** to ensure your long-term digital transformation success.

Structured NPI Stage-Gate Management

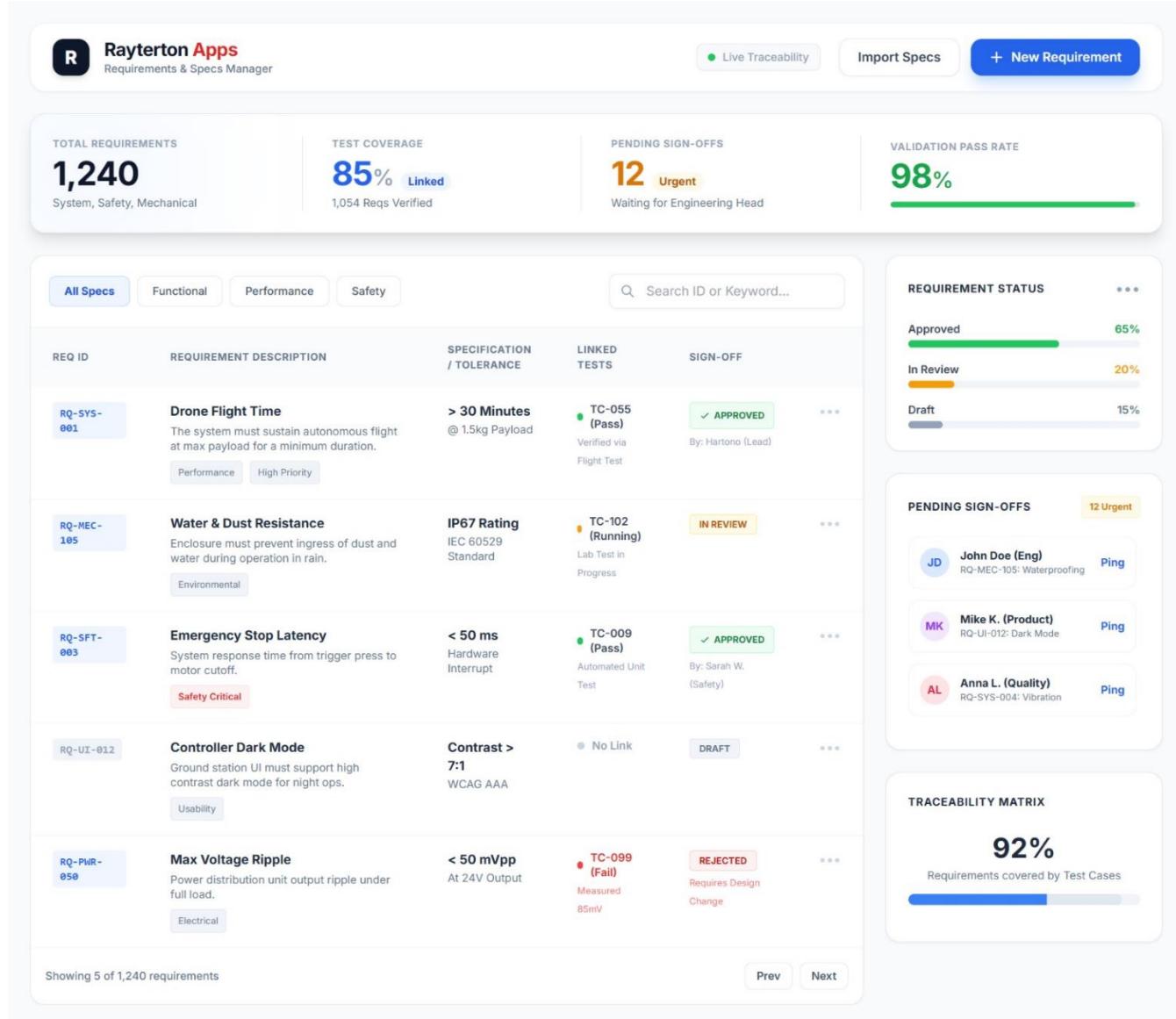
This module replaces disparate tracking methods with a unified system where market requirements are captured hierarchically and linked directly to detailed engineering specifications. It provides real-time visibility into program status and enforces strict governance by ensuring that critical deliverables, such as Gate Reviews and Risk Matrices, are fully validated before the project advances to the next phase, establishing a clear audit trail for every development decision.



Requirement And Specification Management

This module connects customer requirements directly to technical specifications through a multi-level hierarchy. By establishing end-to-end traceability, the system clearly defines project parameters and helps prevent scope deviation during the early development phases, ensuring alignment between market needs and engineering outputs.

The platform centralizes the approval process with digital sign-offs, replacing manual communication methods. It enforces strict version control to maintain a single source of truth, ensuring that all teams execute based on validated data and minimizing the risk of downstream design errors caused by outdated information.



Engineering & Document Hub

Command Center seamlessly synchronizes **Multi-level BOMs** and **3D CAD data** in real-time, preventing revision conflicts with automated check-in/out controls. Secure your intellectual property with a centralized **Document Vault** that automatically watermarks drawings and strictly controls access rights across your organization.

Rayterton Apps
CAD/PDM Integration Hub

Connector: SolidWorks 2025 Connected

Batch Import

Check-In New

TOTAL CAD FILES **8,450**
Assemblies, Parts, Drawings

CHECKED-OUT (ACTIVE) **42** Locked
Currently being edited

ATTRIBUTE SYNC HEALTH **100% OK**
Mass sync updated 2m ago

VAULT STORAGE **1.2TB**

INTEGRATION HEALTH ● ONLINE

- SW** SolidWorks v2024 SP2.0 Connected
- AC** AutoCAD v2023 Idle
- AL** Altium v22.0 Designer Idle

RECENT CAD ACTIVITY [View Log](#)

- Hartono checked in **ASM-DRN-X1** 2 mins ago • Rev B.02 Created
- Budi S. checked out **MOTOR-MOUNT** 15 mins ago • Lock acquired
- System auto-synced 45 attributes 1 hour ago • Mass Sync Job
- Sarah W. failed to check in **BAT-PACK** 2 hours ago • Ref files missing

DISK USAGE **1.2 TB** / 2.0 TB

+50GB this week

PREVIEW	FILE NAME / DESCRIPTION	VER	STATE / LOCK	SYNC STATUS	
	ASM-DRN-X1.SLDASM SW 2024 Drone Main Assembly - Top Level	B.02	Me Checked Out Locked by You	Synced Attributes Updated	Check In
	CHASSIS-LWR.SLDPR SW 2024 Lower Chassis Body - Carbon Fiber	A.05	RELEASED	Synced	...
	MOTOR-MOUNT.SLDPR SW 2024 Alum. Motor Mount Bracket	C.01	B Locked By: Budi S.	Pending Waiting for Check-in	...
	CHASSIS-LWR-DWG.PDF ACROBAT Manufacturing Drawing - View PDF	A.05	RELEASED	Synced	View
	SCREW-M3×10.SLDPR SW 2024 Standard Fastener	A.01	A AVAILABLE	● Error Mass Prop Mismatch	...
	BATTERY-PACK.SLDPR SW 2024 Li-Ion Battery Module	B.03	S Checked Out By: Sarah W.	Pending Sync in progress	...
	ARM-LEFT.SLDASM SW 2024 Left Arm Assembly	A.02	RELEASED	Synced	...

Showing 12 of 8,450 files

Prev Next

Rayterton Apps Item Master & BOM Manager

TOTAL ACTIVE ITEMS **12,450** Parts, Assemblies, Kits

BOM ACCURACY **99.9% Valid** 0 Circular References

ACTIVE VARIANTS **15 Configs** For Product: Drone Pro X1

COST ROLLUP STATUS Today 08:00 AM

BOM Structure Where Used Exploded View Filter Part Number... **BOM BREAKDOWN** By Type **142 Total** Make (45%) Buy (30%) Kit (15%) Obsolete (10%)

LVL **PART NUMBER** **DESCRIPTION** **QTY** **TYPE** **EFFECTIVITY DATES** **STATUS**

LVL	PART NUMBER	DESCRIPTION	QTY	TYPE	EFFECTIVITY DATES	STATUS
0	ASM-DRN-X1	Drone Pro X1 Complete Assy	1	MAKE	Jan 01, 2024 -	Released
1	ASM-PRP-01	Propulsion System Assembly	4	MAKE	Jan 01, 2024 -	Released
2	MTR-BL-500	Motor, Brushless, 500KV	1	BUY	Jan 01, 2024 -	Released
2	PR-CF-12	Propeller, Carbon Fiber, 12 inch	1	BUY	Jan 01, 2024 -	Released
1	ASM-PWR-02	Power Module Assembly	1	MAKE	Feb 15, 2024 -	In Change
2	BAT-LI-35	LiPo Battery 3S (Legacy)	1	BUY	Ended Feb 14, 2024	Obsolete
2	BAT-LI-4S	LiPo Battery 4S (Standard)	1	BUY	Feb 15, 2024 -	Released
1	ASM-CTL-03	Control Module Assembly	1	MAKE	Jan 01, 2024 -	Released
2	CTRL-FC-01	Flight Controller Board	1	BUY	Jan 01, 2024 -	Released
2	GPS-MOD-01	GPS Module	1	BUY	Jan 01, 2024 -	Released
1	ASM-CHS-04	Chassis Assembly	1	MAKE	Jan 01, 2024 -	Released
2	CHS-LWR-01	Lower Chassis Body	1	MAKE	Jan 01, 2024 -	Released

BOM Structure Where Used Exploded View Filter Part Number... **COST DISTRIBUTION** USD **142 Total**

Motors \$2,450 **Battery** \$1,890 **Electronics** \$1,650 **Chassis** \$1,100 **Total Cost** \$7,080

ALTERNATES & SUBSTITUTES Contact: ASM-PWR-02 For: MTR-BL-500 APPROVED ALT MTR-BL-500-B T-Motor Generic Alt

Rayterton Apps Document Control Center **Vault Status: Secure** **Bulk Upload** **New Document**

TOTAL MANAGED DOCS **3,820** Across all projects **PENDING APPROVAL** **14 Review** Avg wait time: 2 days **CONTROLLED PRINTS** **45 Active** Shop floor distribution **SOP COVERAGE** **94%**

Showing 1-15 of 142 items

All Docs Engineering Drawings SOPs Work Instructions Search Document ID...

TYPE	DOC ID / TITLE	REV	LIFECYCLE STATUS	SECURITY
DWG	100-245 Propulsion Assembly Layout	C.0	RELEASED	Internal Only
SOP	QA-050 Incoming Inspection - Electronics	A.1	IN REVIEW	Confidential
WI	AS-001 Motor Mounting (Old Process)	A.0	OBsolete	Archived
SPEC	MAT-005 Aluminum 6061-T6 Grade Req.	B.1	RELEASED	Public (Supplier)
DWG	200-112 Control Module Housing	A.2	RELEASED	Internal Only
SOP	MFG-012 Assembly Line Procedure	C.0	IN REVIEW	Confidential
WI	AS-002 Motor Mounting (New Process)	A.1	RELEASED	Internal Only
DWG	300-089 Chassis Frame Assembly	B.0	RELEASED	Internal Only
SOP	QA-051 Final Inspection - Complete Unit	A.2	RELEASED	Confidential
SPEC	ELC-023 PCB Board Material Spec	A.0	RELEASED	Public (Supplier)

DOCUMENT DISTRIBUTION By Type **3,820 Total** Drawings (80%) SOPs (25%) Specs (5%)

ACCESS ACTIVITY Last 7 days **Views** 1,245 **Downloads** 382 **Prints** 156 **Total Actions** 1,783

ACCESS LOG (24H) View Audit **B** Budi S. viewed DWG-100-245 10 mins ago • Production File **V** Vendor X downloaded SPEC-NAT-005 1 hour ago • Supplier Profile **S** System auto-archived WI-050-001 2 hours ago • Lifecycle Rule

Vault Composition Drawings (80%) SOPs (15%) Specs (5%)

fusing your Bill of Materials and technical documentation into a **single governed ecosystem**. This module allows you to structure complex product hierarchies where **every component is dynamically linked** to its latest specification documents. With automated revision control and secure watermarking, you ensure that every stakeholder from engineering to the shop floor executes based on one validated version of the truth, effectively **eliminating costly errors caused by outdated information**.

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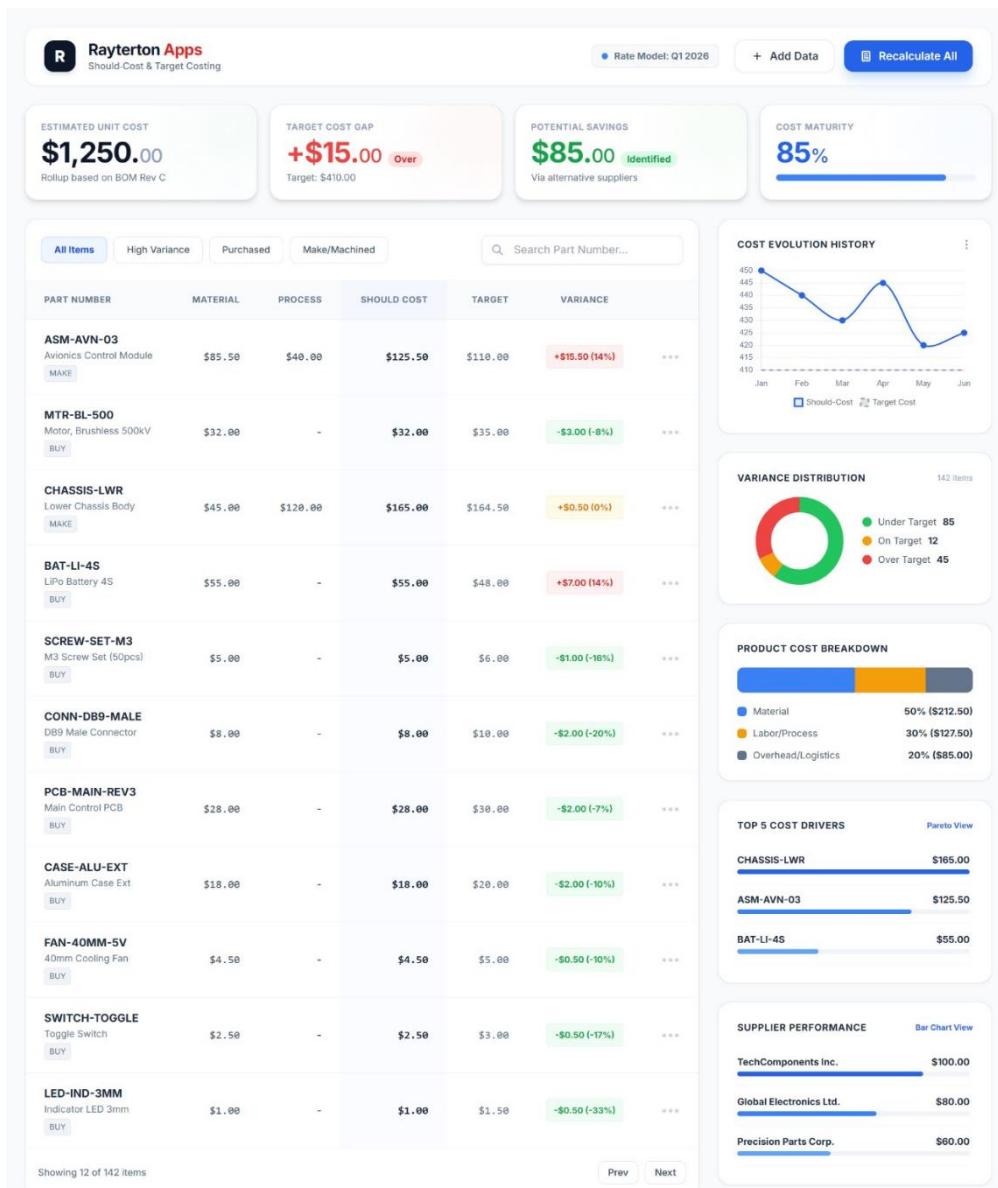
4

Compliance & Material Guardrails

Streamline your product changes with a structured engineering change workflow. This module enables your team to process Engineering Change Requests (ECR) and Orders (ECO) efficiently by assessing the financial and operational impact on existing inventory before approval. By coordinating workflows with manufacturing effective dates, you ensure revisions are implemented smoothly on the shop floor to minimize scrap and maintain production continuity.

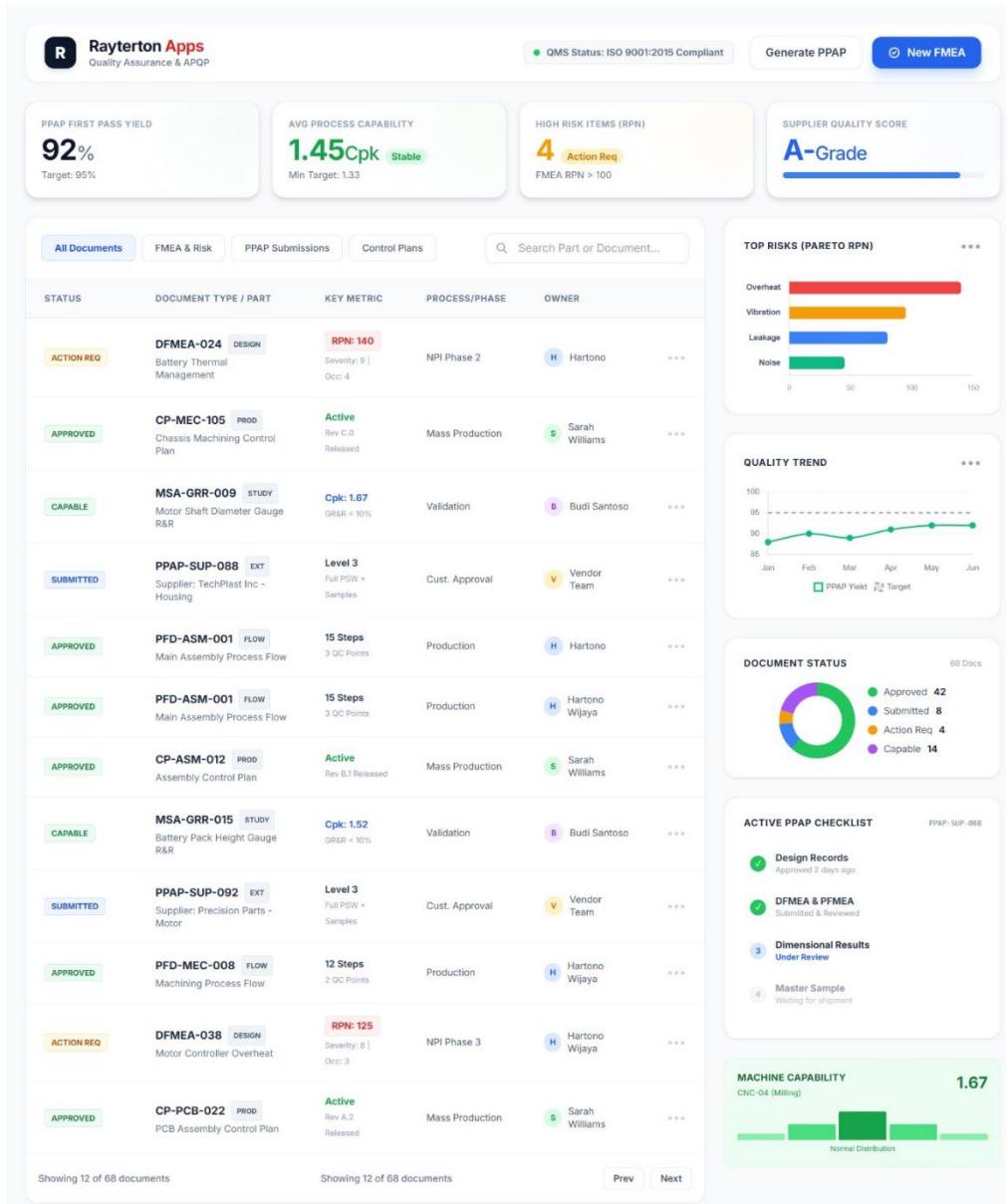
Should-Cost & Target Costing Engine

a financial control engine engineered to eliminate guesswork and protect profitability from the earliest stages of design. This module transforms your Bill of Materials into a dynamic financial dashboard by performing granular BOM rollups that aggregate material, labor, process, and overhead expenses instantly. By calculating the Estimated Unit Cost in real time, the system provides a clear, data-driven view of your financial health relative to your initial budget targets.



The platform empowers your engineering and procurement teams to identify cost drivers immediately through visual indicators that highlight positive and negative variances. With features like the **Cost Evolution History** and **detailed Product Cost Breakdown**.

Quality Planning and Validation



This module centralizes quality management to ensure ISO 9001 compliance throughout the product lifecycle. By integrating APQP tools directly into the workflow, it allows teams to manage live DFMEA and Control Plans while automatically flagging high-risk items through dynamic Risk Priority Number (RPN) tracking and Pareto analysis.

The system streamlines the Production Part Approval Process (PPAP) by monitoring submission statuses and validating process capability (Cpk) in real time. This provides a clear audit trail of manufacturing readiness, ensuring that both internal lines and external suppliers meet defined specifications before full-scale production begins.

Supplier Collaboration Workspace

This ensures vendors always quote and manufacture based on the latest specifications, eliminating the risks of scattered emails and outdated files while significantly reducing administrative overhead and preventing costly production errors.

Rayterton Apps
Supplier Collaboration Portal

OPEN RFQS **12**
Total Value: \$1.2M

SUPPLIER RESPONSIVENESS **2.4 days** ↑ Fast
Avg Quote Turnaround

PPAP SUBMISSIONS **8** Review
Pending Approval

VENDOR ENGAGEMENT **95%**

All Activity RFQs PPAP Doc Shares Search Vendor or Item...

RFQ BID COMPARISON
Item: Aluminum Housing (Unit Cost)

TYPE	REFERENCE / ITEM	SUPPLIER	STATUS
	Pack: SPEC-MAT-005 Raw Material Specs + CAD	Global Metals Ltd.	DOWNLOADED Watermarked PDF
	CN-2026-10 Revision Change: Drawing B to C	All Suppliers (4) Impacted List	3/4 ACKNOWLEDGED
	RFQ-2026-008 Steel Shaft Assembly (10k Units)	Multiple (2) Apex, MetalCo	1/2 QUOTES Due: Jan 28
	PPAP-SUP-092 Part: Motor-Shaft-500	Precision Parts Corp. Taiwan	REVIEW REQ Level 3 Submission
	Pack: SPEC-MAT-012 Copper Wire Specs + TDS	Global Metals Ltd.	DOWNLOADED Watermarked PDF
	CN-2026-12 Revision Change: Drawing B to C	All Suppliers (5) Impacted List	2/5 ACKNOWLEDGED
	RFQ-2025-088 PCB Assembly (Standard)	ElectroTech Inc.	AWARDED PO: 4500020

Showing 10 of 45 records

Rayterton Apps
Supplier Collaboration Portal

OPEN RFQS **12**
Total Value: \$1.2M

SUPPLIER RESPONSIVENESS **2.4 days** ↑ Fast
Avg Quote Turnaround

PPAP SUBMISSIONS **8** Review
Pending Approval

VENDOR ENGAGEMENT **95%**

All Activity RFQs PPAP Doc Shares Search Vendor or Item...

RFQ BID COMPARISON
Item: Aluminum Housing (Unit Cost)

TYPE	REFERENCE / ITEM	SUPPLIER	STATUS	LAST ACTION
	RFQ-2026-005 Aluminum Motor Housing (5k Units)	Multiple (3) Apex, MetalCo, TechCast	2/3 QUOTES Due: Jan 25	Apex submitted bid 2 hours ago
	PPAP-SUP-088 Part: PCB-MAIN-V2	ElectroTech Inc. Shenzhen, CN	REVIEW REQ Level 3 Submission	Docs uploaded Yesterday
	Pack: SPEC-MAT-005 Raw Material Specs + CAD	Global Metals Ltd.	DOWNLOADED Watermarked PDF	User: John.D accessed 4 hrs ago
	CN-2026-10 Revision Change: Drawing A to B	All Suppliers (4) Impacted List	3/4 ACKNOWLEDGED	Pending: Apex Mfg Sent 7 days ago
	RFQ-2025-099 Lipo Battery Cells (Standard)	Volta Battery Systems	AWARDED PO: 4500021	Contract Signed 1 week ago
	RFQ-2026-008 Steel Shaft Assembly (10k Units)	Multiple (2) Apex, MetalCo	1/2 QUOTES Due: Jan 28	MetalCo viewed RFQ 3 hours ago
	PPAP-SUP-092 Part: Motor-Shaft-500	Precision Parts Corp. Taiwan	REVIEW REQ Level 3 Submission	Docs uploaded 2 days ago
	Pack: SPEC-MAT-012 Copper Wire Specs + TDS	Global Metals Ltd.	DOWNLOADED Watermarked PDF	User: Jane.S accessed 1 day ago
	CN-2026-12 Revision Change: Drawing B to C	All Suppliers (5) Impacted List	2/5 ACKNOWLEDGED	Pending: Apex, MetalCo Sent 3 days ago
	RFQ-2025-088 PCB Assembly (Standard)	ElectroTech Inc.	AWARDED PO: 4500020	Contract Signed 2 weeks ago

Showing 10 of 45 records

RFQ ACTIVITY TRENDS

Showing 10 of 45 records

ACTIVITY DISTRIBUTION
45 Records

SUPPLIER HEALTH (TOP 5)

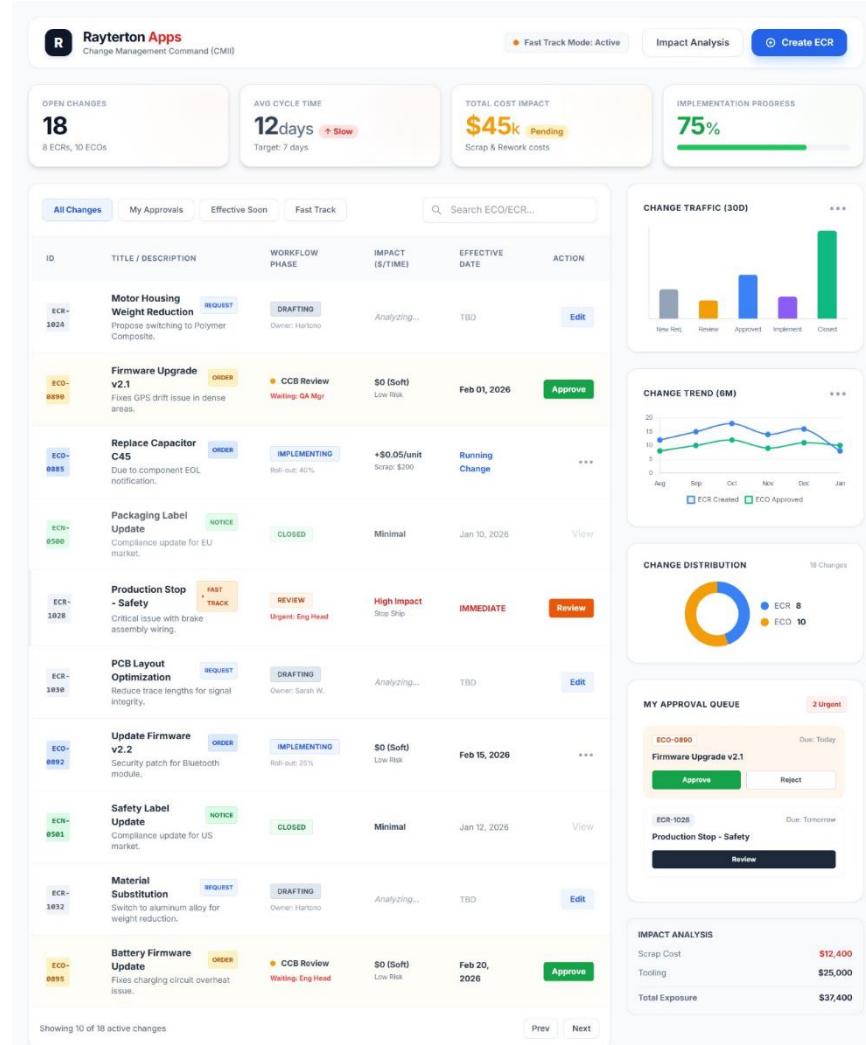
SUPPLIER	Score
Apex Mfg	98% Quality
Volta Battery	95% Delivery
Global Metals	78% Response
Metal Fabrication	92% On-time

View Scorecard

Consolidates all RFQs and commercial negotiations into a single audit-ready workspace for easy comparison. It allows you to track supplier schedules instantly to identify delays early, while securely sharing live technical data directly from your Item Master to ensure strict adherence to the correct revision at all times.

Change Management Console

Enables teams to execute Engineering Change Requests (ECR) and Orders (ECO) systematically, ensuring that revisions are introduced to the shop floor in a controlled manner. By aligning approval workflows with manufacturing schedules, the system helps minimize scrap and prevents unplanned disruptions to production.



This platform calculates the potential financial and operational impact on existing inventory before a change is approved. It coordinates effective dates to match shop floor readiness, ensuring new revisions are implemented only when materials and resources are in place. This maintains a complete audit trail, providing full traceability and authorization history for every design modification.

Full Product Tracking and Synchronized Systems

The Digital Thread module provides a structured record of your product's history by tracing parts from initial requirements and design through to manufacturing, service, and returns.

Supported by the Integrations module which connects directly to your existing software stack, this combination synchronizes engineering specifications and operational data across departments, eliminating the need for manual transfer while maintaining full lifecycle visibility.

Rayterton Apps
Digital Thread & Traceability

Thread Coverage: 100% | Genealogy Tree | Trace Serial #

TRACKED UNITS
1.2M
Serialized Products in Field

DATA CONTINUITY
100% Linked
Reqs → Design → Mfg → Service

FIELD ISSUES (RMA)
0.4% Avg
Linked to Batch #2204

RECALL READINESS
< 2min

UNIT HISTORY: SN-8890
Active

- D** Design Released: Rev B.02 approved via ECO-0885, Dec 20, 2024
- M** Manufactured: Passed End-of-Line Test (Pass), Jan 10, 2025 • Workstation 4
- S** Shipped: Delivered to Mining Corp. A, Jan 15, 2025 • Logistics
- F** Field Operation: Telemetry active, 400 flight hours, Live Status: OK

QUALITY ALERT IMPACT
If Batch #8500 is recalled, downstream impact:

120 UNITS → 3 CUSTOMERS

Simulate Recall

Showing 10 of 1.2M units | Prev | Next

Rayterton Apps
Enterprise Integration Bus (ESB)

Gateway: 12ms Latency | View API Docs | Retry Failed Jobs

ACTIVE CONNECTORS
8/8
ERP, MES, CAD, CRM

API THROUGHPUT (24H)
450k Req
Peak: 120 req/sec

SYNC ERRORS
24 Action
0.005% Failure Rate

SYSTEM UPTIME
99.99%

LIVE TRAFFIC (REQ/MIN)

TIME / ID	DIRECTION (SOURCE → TARGET)	OBJECT / PAYLOAD	STATUS	LATENCY
10:45:02 AM TX-998215	PLM → SAP ERP	BOM Transfer Item: ASM-GRN-X1 (Rev C)	SUCCESS	240ms
10:44:15 AM TX-998214	MES → PLM	Work Order Status WO-8851 Completion	TIMEOUT	500ms
10:42:00 AM TX-998213	SW PDM → PLM	File Metadata Sync 35 Attributes Updated	SUCCESS	85ms
10:30:00 AM TX-998218	PLM → MES	Daily Cost Dump Batch Export	SUCCESS	125
10:28:45 AM TX-998209	SAP ERP → PLM	Material Master Data SKU: MAT-2024-001	SUCCESS	320ms
10:27:30 AM TX-998208	MES → PLM	Production Status Update WO-8852 In Progress	TIMEOUT	5000ms
10:25:15 AM TX-998207	SW PDM → PLM	Drawing Revision Sync DWG-4521 Rev B	SUCCESS	150ms

TOPLOGY STATUS
Environment: PROD

- SAP S/4HANA: Online
- SolidWorks PDM: Online
- Siemens Opcenter: Retrying
- PowerBI: Idle

ERROR QUEUE
Sync failures detected in MES Module regarding WO completion status.

Ignore | Re-Roll All

Glossary

System & Lifecycle Management

- PLM (Product Lifecycle Management): An all-in-one platform to orchestrate the entire product business from concept definition to manufacturing and service.
- NPI (New Product Introduction): A structured management system (Stage-Gate) used to manage the product lifecycle from concept to launch.

Engineering & Product Data

- BOM (Bill of Materials): A complex, multi-level list of components used to synchronize engineering data and calculate costs.
- CAD (Computer-Aided Design): 3D design data that is synchronized in real-time with the BOM to prevent revision conflicts.
- ECR (Engineering Change Request): A formal request to modify a product design or process, assessed for financial and operational impact.
- ECO (Engineering Change Order): An order to execute a change after approval, coordinated with manufacturing schedules to minimize scrap.

Quality & Compliance

- APQP (Advanced Product Quality Planning): Quality tools integrated directly into the workflow to ensure compliance.
- DFMEA (Design Failure Mode and Effects Analysis): A method used to identify potential risks in the design phase.
- PPAP (Production Part Approval Process): A process to validate manufacturing readiness by monitoring submission statuses..

Supply Chain & Operations

- RFQ (Request for Quotation): Procurement documents consolidated in the supplier collaboration workspace for commercial negotiations.
- RMA (Return Merchandise Authorization): Used to track returned products and field issues (Visible in the "Digital Thread & Traceability" system view).

Ready to Transform Your Product Development at the Enterprise Level?

Share your NPI strategy, quality targets, and supply chain challenges with us today. We will configure the Rayterton PLM ecosystem to accelerate your time-to-market and automate the end-to-end lifecycle from initial requirement definition and design to mass production and service.

This platform is engineered for engineering leaders and executive teams who demand control, traceability, and scalable integration. Partner with us to institutionalize your product governance into a modern digital thread that is audit-ready, integration-ready, and fully prepared to scale across all your manufacturing sites and global suppliers.

Contact Us :**+62 812 9615 0369****marketing@rayterton.com**

About Rayterton

Established in 2003, Rayterton delivers comprehensive Best Fit Software Solutions, server and hardware products, and technology services to a wide range of industries and organizations. Our core expertise lies in Business Process Improvement (BPI), IT Infrastructure, and IT Management.

At Rayterton, we are committed to empowering our clients by enhancing their business operations through tailored IT and management solutions. We combine innovation, experience, and client collaboration to ensure long-term success and digital transformation.

Our Competitive Strengths

100% Risk Free**Best fit to
client
requirements****Easy to
customize****Software
ownership****No Change
Request (CR)
fees during
maintenance****For more information, visit rayterton.com**