

BLACK HILLS AI | BLACK HILLS RENEWALS

Automation for Accuracy. *AI for Acceleration.*

A better way to run IP Practice, from docketing to renewals.

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Introduction

Patent rights are won in prosecution, but they are kept in operations. Every issued patent depends on an unglamorous chain of administrative work: dates calculated correctly, references disclosed completely, documents proofread carefully, fees paid on time in the right amount to the right office. When that chain holds, nobody notices. When it breaks, the consequences range from expensive rework to the permanent loss of rights. Trademark rights follow the same logic: registrations survive on timely maintenance filings and renewals, on an equally unforgiving calendar.

Black Hills AI has been automating this work since 2009, well before the current wave of interest in artificial intelligence, and that experience has produced a distinctive engineering philosophy: not all automation is the same, and the difference matters enormously in IP. For work where an error can cost rights, deterministic, rules-based processes that are engineered for exactness are run. Generative AI is applied where it genuinely helps, assisting attorneys with drafting and research and performing preliminary work in intake pipelines, but it never makes final decisions; every determination that must be absolutely right is made deterministically.

This paper looks at where administrative risk actually originates in IP practices, explains the distinction between deterministic and generative automation, and describes how Black Hills AI and Black Hills Renewals combine deterministic engines, attorney-built AI tools and U.S.-based professionals to protect rights, control costs and keep portfolio data accurate across the entire IP lifecycle, for patents and trademarks alike.

Where Administrative Risk Really Comes From

Ask an IP team where their risk lives and most will point to substantive work: claim scope, prior art, litigation strategy. In practice, a large share of preventable loss comes from routine administration. Five patterns account for most of it.

Deadline density.

A single application generates dozens of dates across its life, each governed by different rules, grace periods and fee consequences. Multiply that across a portfolio and across jurisdictions, and the docket becomes a system where one miscalculated or unentered date can quietly sit until it becomes unfixable. Docketing mistakes remain one of the most common sources of malpractice exposure in IP practice, and trademark portfolios add their own calendar of use declarations, maintenance filings and renewals with the same unforgiving character.

Manual re-keying.

Much of the daily workload is reading correspondence from patent offices and transcribing what it means into a docketing system. Done by hand, this work is slow, repetitive and error-prone precisely because it is monotonous. The people best qualified to do it carefully are also the people whose time is most valuable elsewhere.

Constantly shifting rules.

Official fees change, procedures are amended, and jurisdiction-specific quirks accumulate. Patent term adjustment adds a further layer: adjusted expiry dates must be calculated and tracked correctly, or maintenance decisions are made against the wrong clock. Keeping a manual operation current with all of this is a full-time job in itself.

People and turnover.

Experienced IP paralegals and docketing specialists are hard to hire and harder to replace. When institutional knowledge is concentrated in a few individuals, a departure or an extended absence becomes an operational event, and workload spikes have nowhere to go.

Opacity in annuities.

Renewal payments are often handled through providers whose invoices blend official fees, service charges and currency conversion into a single number. Without visibility into true costs, teams struggle to budget accurately and to make informed decisions about which assets are worth maintaining. And when margins are generous enough, they can absorb calculation errors entirely, so inaccuracy is paid for without ever being seen.

Underneath all five patterns is the same root cause: portfolio data that gradually drifts away from the official record, maintained by processes that depend on sustained human vigilance. The rest of this paper describes how Black Hills addresses that root cause directly, starting with the engineering principle that governs everything else.

Where errors tend to surface

- Deadlines entered incorrectly, or never entered, after office correspondence arrives.
- References cited in one family member but never disclosed in a related application.
- Patent term adjustments accepted without verification, shifting expiry dates and renewal windows.
- Errors in issued patents left uncorrected until they matter in licensing or litigation.
- Annuities paid on abandoned assets, or lapsed on assets the business still needs.
- Ownership, status and fee-entity data that no longer matches patent office records.

Two Kinds of Automation, and Why the Difference Matters

“AI” has become a single word for two very different technologies, and the distinction is not academic in IP operations; it determines whether a deadline is right.

Generative AI is probabilistic by design. It produces fluent, plausible output, and the same input can yield different results on different runs. That makes it a remarkable assistant for drafting, summarizing and research, where a professional reviews the output anyway. It also makes it the wrong tool for deadline calculation and docket entries, where “plausible” is not a standard and an error may not be discovered until the date has passed.

Deterministic automation is the opposite. Rules are explicitly encoded, the same input always produces the same output, and every behavior can be exhaustively tested before it ever touches a live docket. When a patent office changes a procedure or a fee, the rule is updated once, validated, and applied identically everywhere. There is no guessing anywhere in the chain, and every result can be traced back to the rule and the document that produced it.

Black Hills applies a simple engineering boundary: generative AI never makes a final decision on the record of truth. It may be used for preliminary work, such as an initial read or triage of an incoming document, but everything it produces feeds into extensive deterministic processes that make the actual determinations:

which rules apply, which dates result, and what enters the docket. Those deterministic engines, built for absolute accuracy and backed by automated verification, own every entry in the record. Generative AI also assists attorneys directly with drafting and analysis through the attorney-built Otto™ tools described later in this paper, always under professional control. Clients get the productivity of modern AI without ever betting a deadline on it.

	Deterministic Automation	Generative AI
How It Behaves	Encoded rules; the same input always produces the same output.	Probabilistic; output is fluent and plausible but can vary between runs.
Best Suited For	Deadline calculation, docket entries, status monitoring, fee and data processing.	Preliminary document triage, drafting assistance, response shells, summarization, research and analysis.
How Errors Show Up	Visible and testable; a wrong rule fails to same way every time and is fixed once.	Plausible-but-wrong output that must be caught by professional review.
Role at Black Hills	Makes every final docketing determination and automatically verifies the result; people review only what the checks flag.	Preliminary processing that feeds deterministic checks, plus Otto™ drafting and research assistance, never the final decision.

Docketing for Patents and Trademarks: Deterministic by Design

Docketing is the highest-volume task in IP administration and the least forgiving, and Black Hills automates it for patents and trademarks alike, holding the entire portfolio to one standard of accuracy. Incoming correspondence from the USPTO and foreign offices is retrieved and identified; where generative AI contributes at this stage, its work is strictly preliminary, an initial read that feeds the deterministic engine. The determinations that matter are then made by explicitly encoded, tested jurisdictional rules: which actions a document triggers, which deadlines result, and what enters the docket, generated the same way every time, for every client, with a complete audit trail. No final decision rests on a model’s best guess.

Verification is also automated. DocketSaver™ checks the work from both directions: it verifies every date that is docketed, and it audits the items that were not docketed, confirming that each omission was correct rather than an oversight. Errors of omission are precisely the ones manual review is worst at catching, and because DocketSaver™ is automated, its checking is applied to everything, every time, immune to the attention fatigue that undermines human spot-checking at volume. Only when an issue is identified does a person step in: a U.S.-based specialist reviews and resolves whatever the system flags. Human expertise is concentrated on the exceptions, where it actually changes outcomes, rather than spent re-reading thousands of entries that were already right.

Around this core automation and verification layers sits additional, purpose-built tools. DualDocket™ adds cross-checking of docket integrity; automated Patent Center status-change alerts report USPTO developments as they happen rather than when someone notices; automated integrations keep data flowing between the docketing engine and the IP management systems clients already use.

Our international patent management software, Honu™, streamlines foreign correspondence management and brings the same discipline to agent communications across jurisdictions.

Because the work happens within a client's existing docketing environment rather than forcing a migration, firms and corporate teams keep their systems, their reports and their working habits. What changes is the reliability and cost of keeping those systems accurate.

Deterministic docketing in practice

- Patent and trademark correspondence is processed under one deterministic standard; any generative assistance is preliminary and feeds the rules engine, never the final entry.
- Deadlines are computed from explicitly encoded, tested jurisdictional rules, updated centrally when offices change procedures.
- DocketSaver™ automatically verifies every docketed date, and audits undocketed items to confirm they were correctly excluded.
- Patent Center status changes trigger automatic alerts, so nothing waits for a manual check.
- When automated verification flags an issue, a U.S.-based specialist reviews and resolves it; every action is logged for audit.

Paralegal Services That Flex With the Workload

Alongside docketing, Black Hills provides U.S.-based IP paralegal support across patent and trademark matters, covering the day-to-day work that surrounds prosecution and portfolio maintenance: preparing filing shells and formal documents, handling routine office actions and formalities, generating status reports and managing correspondence. Repetitive, rules-driven paralegal workflows are automated with the same deterministic discipline as docketing, so human effort concentrates where judgment is actually required. That automation extends through the document pipeline itself: document shells and response drafts are generated and delivered automatically, flowing directly into the systems where teams work, including document management platforms such as iManage and NetDocuments, so matters arrive ready for professional attention rather than waiting to be assembled. Client reporting runs on the same principle: report-out communications are generated and delivered automatically as events occur, so clients hear about office actions, filings and status changes promptly, without anyone assembling the update by hand.

Support scales in both directions, from overflow help during filing surges or staff absences to fully outsourced administrative functions. For many clients the most valuable effect is organizational rather than transactional: administrative capacity stops depending on the hiring market, turnover stops being an operational emergency, and in-house professionals spend their time on work that actually requires them.

Protecting Enforceability: Proofreading, PTA Verification and IDS Management

Petent proofing.

Errors in a patent application or an issued patent are cheapest to fix at the moment they occur and most expensive to discover during licensing, diligence or litigation. Black Hills' patent proofing services combine automated checks with expert review to catch discrepancies in claims, priority information, references and formal requirements while correction is still straightforward. Reviewing an issued patent against the allowed application, for example, can surface printing and clerical errors early enough to address them through routine correction rather than under adversarial scrutiny years later.

Patent term adjustment verification.

Patent term adjustment determinations directly affect when a patent expires, and therefore what it is worth and how long it must be maintained. They are also, at bottom, a calculation, which makes them an ideal candidate for deterministic verification. Black Hills' PTA verification services independently check adjustment determinations so that clients neither surrender term they earned nor plan around term they do not actually have. Verified expiry dates flow through to renewals, keeping maintenance decisions anchored to the right clock.

Information Disclosure Statement (IDS) management.

Few administrative tasks carry more enforceability risk relative to their apparent routineness than the duty of disclosure. As families grow, references accumulate across related applications, counterpart foreign filings and ongoing prosecution, and tracking what has been cited where becomes genuinely difficult at scale. A missed reference is not a clerical footnote; it is a potential inequitable conduct argument against the resulting patent.

Black Hills' IDS management services bring structure to this problem: monitoring references across families, deduplicating and cross-citing systematically, and preparing timely, complete disclosures for filing. The work protects the enforceability of the resulting patents while relieving attorneys and paralegals of one of the most tedious tracking exercises in prosecution.

Otto IP™: Attorney-Controlled Generative AI, Where It Belongs

The boundary described earlier cuts both ways. Just as generative AI is kept out of the deterministic path, there is real work where it excels: the drafting, analysis and research that professionals review as a matter of course. For that work, Black Hills built the Otto™ family of tools, designed by seasoned IP attorneys specifically for IP practice rather than adapted from general-purpose chatbots.

Otto IP™ provides guided skills for more than a hundred IP tasks, from application sections and office action responses to reporting and agent instructions. Each skill walks the user through structured instructions, executes under professional direction, and produces work product the attorney refines and owns; skills can

be chained together for complex tasks such as due diligence reviews. The Otto IP™ Word add-in brings the same capabilities into the environment where patent professionals already work, including antecedent basis checking of claims, instant office action response shells and data integration with IP management systems. Otto Assistant™ acts as a virtual associate for day-to-day questions and tasks, and Otto HUB™ connects the Otto tools to firm systems and data sources, including through its MCP Controller, so AI assistance operates on accurate, current information.

Throughout, control stays with the professional. Otto accelerates the work; it does not replace the judgment, and it never makes the final call on a docket. Even where Otto's generative capabilities contribute to docketing intake, their output is preliminary by design, validated by deterministic processes before anything becomes part of the record. That division of labor is what lets clients adopt generative AI aggressively for productivity while holding the record of truth to a deterministic standard.

Security commitments behind Otto IP™

- Client data is protected with state-of-the-art encryption in transit and at rest.
- No client data is used to train AI models.
- Zero-retention APIs keep data fully sandboxed.
- No third-party data storage or monitoring.

Black Hills Renewals: Annuities Without the Black Box

Renewals are the one stage of the IP lifecycle where an administrative miss is routinely fatal to the right itself. They are also, for many organizations, the least transparent line item in the IP budget. Black Hills Renewals was built to address both problems at once.

The economics of the black box.

Transparency inverts that arrangement. When official fees are itemized against the patent offices' own schedules, an error has nowhere to hide, so accuracy must be real rather than asserted. That discipline, with fees calculated deterministically and every line item open to client verification, is the foundation the rest of Black Hills Renewals is built on: clients pay for payments made correctly, not for a margin that insulates a provider from its own mistakes.

Transparency as a design principle.

Clients see their renewal costs clearly, at a level of granularity that makes the numbers usable: official fees, service charges and totals that can be examined per asset, per family and per jurisdiction, in a dedicated renewals portal. Instead of a consolidated invoice that must be taken on faith, teams get data they can budget from, audit and defend internally.

Decision support, not just payment processing.

Because the underlying data is granular, it can do more than settle invoices. Cost models can be run on individual patents and on whole families to support keep-or-lapse decisions, and portfolios can be organized with custom tags reflecting what actually matters to the business, such as technology area, licensing and third-party obligations, transactional history and competitive relevance. When budgets tighten, the same

data lets a team model a reduction several different ways and show the business exactly what each level of spend preserves. Renewal decisions become an extension of portfolio strategy rather than an automatic expense.

Flexibility and verification.

Teams work the way they prefer: instructions can be managed directly in the platform, or sent by email for the Black Hills team to enter, with the portfolio updated accordingly. During onboarding, and in transitions such as acquisitions, payment histories can be collected from the USPTO and most foreign patent offices to confirm what has actually been paid, so the renewal record starts verified rather than assumed. Tailored reports, including cost projections on upcoming annuities and payment histories, keep forecasting grounded in real numbers, and verified expiry dates from PTA checking keep the renewal calendar honest.

Six questions to ask any annuities provider

- Can we see official fees and service charges separately, per asset and per jurisdiction?
- If an official fee were calculated incorrectly, would we ever know, or would the margin quietly absorb it?
- Can we model future costs by patent and by family before making keep-or-lapse decisions?
- How is payment actually verified against patent office records, and how would we know?
- What happens when our instructions change late, or when a portfolio arrives mid-cycle from an acquisition?
- Can we organize and report on renewals using our own business categories, not just yours?

Portfolio Data and Analytics

Every service described in this paper depends on portfolio data that matches the official record. Black Hills' IP data services address that dependency directly: auditing portfolio records against patent office sources such as USPTO data, reconciling discrepancies in status, dates and bibliographic information, and cleaning data before it causes a missed action or a wrong decision. For portfolios arriving through mergers or transfers, this verification step turns an inherited data set into a trusted one.

On top of clean data, analytics help teams evaluate what they own using objective signals, such as forward citations and filing activity in a technology class, to inform pruning, continuation and investment decisions. Combined with the cost modeling in Black Hills Renewals, the result is a portfolio managed on evidence: what an asset is worth, what it costs to keep, and how the two compare. The aim is consistent with everything else in the Black Hills model: give decision-makers an accurate picture, and let the decisions stay theirs.

Security, Confidentiality, and U.S.-Based Delivery

All Black Hills service work is performed in the United States by U.S.-based professionals. That choice has practical consequences beyond preference. Teams can reach the people doing their work during ordinary business hours, without hand-offs across time zones. Confidential client information stays within the country. And because technical data never leaves the U.S., clients avoid the added complexity of analyzing technology export control requirements that can arise when patent administration is performed offshore.

The same posture extends to the technology. The Otto™ platform is built to enterprise security standards, client data is never used to train AI models, and zero-retention interfaces keep information sandboxed

rather than accumulating in third-party systems. For law firms, all of this simplifies conversations with their own clients about where sensitive material goes and who touches it. Outsourcing the work does not mean outsourcing the answer to that question.

The Black Hills Products & Services at a Glance

For reference, the table below summarizes the combined offering of Black Hills AI and Black Hills Renewals, organized the way clients encounter it: the attorney-built Otto™ platform, the deterministic automation engines, the U.S.-based specialist services that surround them, and Black Hills Renewals.

Otto™ Platform

Attorney-Built AI for IP Practice



Otto IP™

Guided-skill generative AI for more than a hundred IP tasks, from application sections and office action responses to reporting and agent instructions, with skills that can be chained for complex work such as due diligence reviews.



Otto IP™ World Add-in

Brings Otto into Microsoft Word, including antecedent basis checking of claims, instant office action response shells and data integration with IP management systems.



Otto Assistant™

A virtual associate for daytoday IP questions and tasks, under professional direction and review.



Otto HUB™

Connects the Otto tools to firm systems and data sources, including through its MCP Controller, so AI assistance operates on accurate, current information.

IP Automation

Deterministic Engines & Safeguards

- ✓ **Automated IP Docketing**
Deterministic, rules-based docketing of patent correspondence: retrieval, identification, deadline computation and docket entries, generated identically every time with a complete audit trail.
- ✓ **Automated TM Docketing**
The same deterministic docketing standard applied to trademark matters, so the entire portfolio is held to one level of accuracy.
- ✓ **Automated Paralegal**
Automation of repetitive, rules-driven paralegal workflows, concentrating human effort where judgment is required.
- ✓ **Automated Shell Generation**
Automatic generation and delivery of document shells, such as filing and office action response shells, populated from matter data and delivered where teams work.
- ✓ **Automated Response Drafting**
Automated drafting and delivery of response documents into the client's workflow, ready for professional review and revision before anything is filed.
- ✓ **Automated Client Reporting**
Automated preparation and delivery of client reportout communications, reporting office actions, filings and status changes as they occur, so clients stay informed without manual drafting and dispatch.
- ✓ **DMS Integration**
Delivery of generated documents directly into document management systems, including iManage and NetDocuments.
- ✓ **DocketSaver™**
Automated verification of the docket from both directions: every docketed date is checked, and undocketed items are audited to confirm each omission was correct, with flagged issues routed to a specialist for review.
- ✓ **DualDocket™**
Additional crosschecking of docket integrity.
- ✓ **Patent Center Alerts**
Automated monitoring of USPTO Patent Center status changes, surfacing developments as they happen.
- ✓ **Automated IP Integrations**
Keeps data flowing between the Black Hills engines and the IP management systems clients already use.

Specialist Services

U.S.-Based Expertise On Demand



IP Docketing Services

U.S.-based docketing specialists handling patent and trademark dockets, from overflow support to fully outsourced operation.



Paralegal Services

Filing shells and formal documents, routine office actions and formalities, status reporting and correspondence management across patent and trademark matters.



IDS Management

Cross-family reference monitoring, systematic deduplication and crosscitation, and timely, complete disclosure filings that protect enforceability.



Patent Proofing

Automated checks plus expert review of claims, priority information, references and formalities, before and after issuance.



PTA Verification

Independent verification of patent term adjustment determinations, so expiry dates and renewal calendars rest on the right clock.



Foreign Correspondence Management

Disciplined handling of agent communications across jurisdictions, supported by Honu™, Black Hills' international patent management software.



IPS Consulting

Experienced guidance on IP operations, workflows and process improvement.



IP Data Services and Analytics

Portfolio audits and reconciliation against patent office records, data cleansing, and objective analytics such as citation and filing-activity signals to support portfolio decisions.

Black Hills Renewals

Transparent Maintenance of Rights



Patent Annuities

Deterministic fee calculation with official fees and service charges itemized per asset, family and jurisdiction, and monitored payment workflows.



Renewals Portal

Granular visibility into costs and status, with custom tags for technology area, licensing obligations, transactions and competitive relevance.



Cost Modeling and Forecasting

Keep-or-lapse cost models on individual assets and families, cost projection reports, and budget scenarios that show what each level of spend preserves.



Payment Verification

Collection of payment histories from the USPTO and most foreign patent offices at onboarding and in acquisitions, so the renewal record starts verified rather than assumed.

Working with Black Hills

Black Hills AI and Black Hills Renewals operate as an extension of a client's team rather than a replacement for it, and the Black Hills automation heritage stretches back to 2009. Engagements typically begin with verification, confirming that portfolio records, dockets and payment histories match the official record, because every subsequent service is only as good as the data underneath it. From there, the scope is the client's choice: many organizations start with a single pain point, such as renewals, IDS management, PTA verification or proofing, and expand as trust builds.

Capacity flexes with the portfolio. Filing surges, grant clusters, staff transitions and acquisitions are absorbed without a hiring cycle, and without disturbing the systems and workflows clients already rely on. The measure of success is quiet: deadlines met, records accurate, costs visible, and in-house professionals free to do the work they trained for.

About Black Hills AI

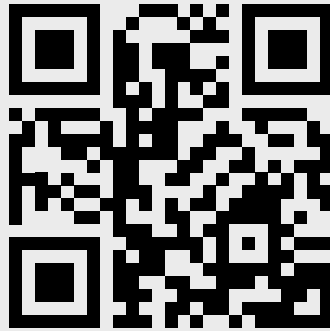
Black Hills AI provides AI automation and legal support services for intellectual property from its offices in the United States, serving law firms and corporate IP departments, and has been automating IP work since 2009. Its offerings span automated patent and trademark docketing, paralegal support, automated document generation and delivery, automated client reporting, patent proofing, patent term adjustment verification, IDS management, foreign correspondence management, IP consulting, and data services and analytics. The company's attorney-built Otto™ platform, including Otto HUB™, the Otto IP™ Suite and Otto Assistant™, pairs deterministic automation for accuracy-critical work with attorney-controlled generative AI for drafting and analysis.

About Black Hills Renewals

Black Hills Renewals was built around a simple conviction: paying to maintain IP rights should never mean taking a provider's word for it. The company manages patent annuities across global portfolios for law firms and corporations, and it is designed, end to end, for visibility. Official fees and service charges are itemized to the individual asset, so every number can be checked against a patent office's own schedule. A granular renewals portal puts costs, statuses and custom business tags at the client's fingertips, and cost modeling turns that data into decisions, from a single keep-or-lapse question to a portfolio-wide budget scenario. Payments themselves are verified against USPTO and foreign patent office records, so the renewal record is not merely maintained but proven.

Black Hills Renewals is a separate company from Black Hills AI, and a close one. The two share a name, a philosophy and a way of working: U.S.-based teams, deterministic accuracy, and transparency that clients can verify rather than take on faith. Together they cover the IP lifecycle end to end, Black Hills AI keeping the docket and the data exact, and Black Hills Renewals keeping the rights alive.

Visit Our Website



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To learn more or schedule a demo, visit blackhills.ai.

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